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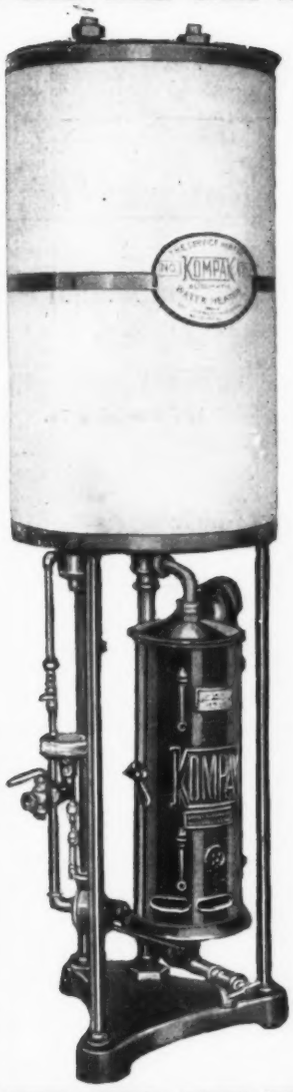

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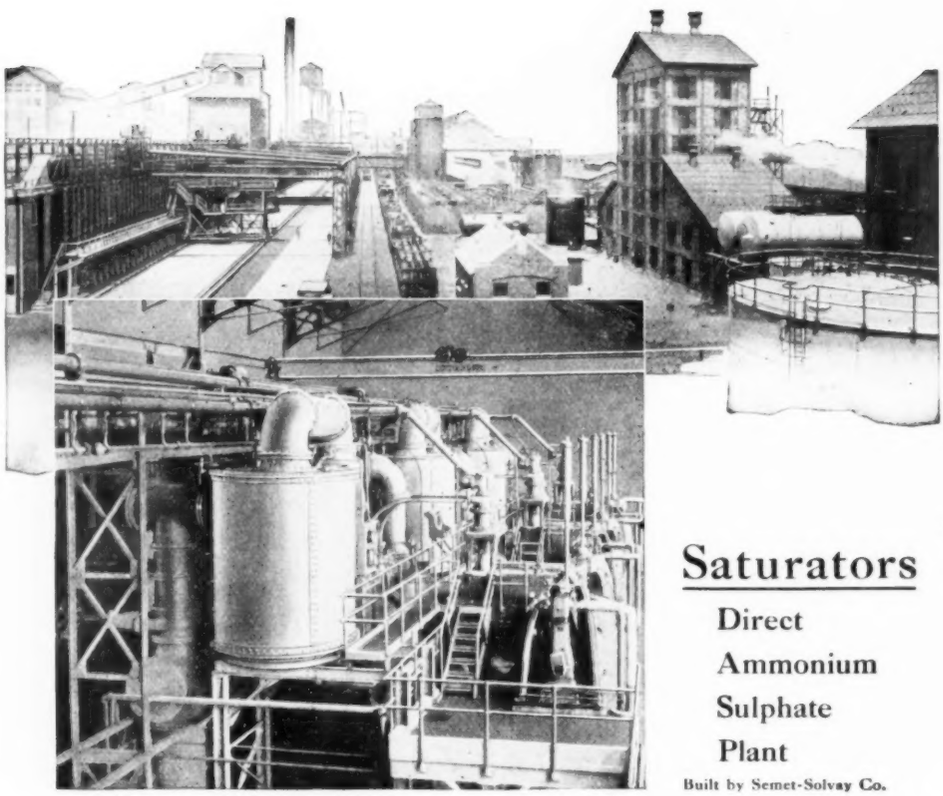

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Shale Oil

Its Commercial Possibilities as Seen by a Man in the Field

By J. H. GINET

It is doubtful if ever any infant industry of the past has been so much thought of, talked of, written about, praised and condemned, and so many millions of dollars invested in it, prior to commercial development, as has been the case with the so-called "shale oil business," and in spite of all that has been said and done, the American public is still waiting for the first real indication of practical and profitable operations

Many would have us believe that this is not "a poor man's business," and that "in twenty years from now the making of oil from shale will be a profitable business"—but is this true? It all depends on the following:

Can oil be made now from shale in commercial quantities?

Can shale oil be manufactured economically?

Can shale oil be refined economically into salable products?

Can shale oil and its refined products be marketed profitably now in competition with crude well petroleum and its refined products?

Is the manufacturing, refining and selling of shale oil and its products exclusively a "rich man's job," or can this new enterprise be carried on profitably on a small scale?

These are very important questions and, during the past two years particularly, have been the subject of much speculation alike by laymen and those technically trained. Each and all of these questions must be answered decisively and in the affirmative, and the answers must be backed up with indisputable evidence, before the hard-headed business men of to-day will venture an investment of time or money in the development of this coming greatest of all industries.

The making of oil from shale is purely a "manufacturing" proposition, just as the making furniture, shoes, clothing or any other factory-made article, and therefore its success depends on the same three essentials that are required for any successful manufacturing enterprise, viz.:

A dependable market;

An abundance of raw material;

An efficient means of process for converting the raw material into the finished product, economically and on a commercial basis.

Are these "three essentials" available? That is the question which must be answered satisfactorily and indisputably before we can hope or expect that American capital will be invested extensively in this business.

The only answer that will convince or satisfy is one that not only states, but proves that certain definite, practical results from actual operations have already been had. Thousands of articles have been published during the past three years expounding and explaining various theories, still capital hesitates to enter the field.

To say just what experimental work has been carried on, or what practical results may have been obtained by the many individuals and concerns engaged in working out the so-called "shale oil problems," is impossible, for various reasons, the principal reason being that much of this work is being done in secret; therefore the writer is compelled, in his endeavors to prove the availability of the necessary "three essentials," to confine his remarks very largely to what has been accomplished by himself and his organization.

Let us consider each of the above named "three essentials" in the order given:

The First Essential

Market—Our first essential.

Is oil an "essential commodity"? In a recent conference of some of our highest Federal officers, it is reported that oil was referred to as the "keystone commodity of the civilized world." Every day we read accounts of the activities of individuals, large corporations and even nations, in their efforts to secure control of oil concessions in practically all parts of the world. Only a few short months ago "oil" was the one and only subject considered in the so-called "oil treaty" between France and Great Britain. These things can indicate only that oil is truly our "keystone commodity"; that the past tremendous increase in consumption of oil is expected to and must continue at an even greater rate than it has during the past few years, and also that there is a very real prospect that "oil from wells" may soon fail to entirely supply the demand; and this is true, notwithstanding the present temporary slump in crude oil prices, which latter is, beyond question, due only to a necessary slowing down of oil consuming enterprises in sympathy with the general "after-war" readjustment of all business.

Can there be any question, therefore, as to whether or not we may reasonably look forward to an ever-growing market for oil?

Raw Material—Our second essential:

Who can do more than merely "guess" at the amount of "oil-bearing shale" that is available in the world? The writer is thoroughly familiar, from first hand experience, with the oil shales of western Colo-

rado, and especially those of Garfield County, in which there are approximately 230,000 acres of oil-bearing shale, having a depth of at least 100 ft. of workable shale that will yield one barrel or more of oil per ton. Other writers have placed the figure at from 100 to 500 ft. in depth, and the writer feels fully justified in adopting not less than the 100-ft. estimate, because he has spent days, weeks and months in our shale mountains with an engineer who carried his transit, and a miner who carried and used pick, shovel and powder as occasion demanded, in order to determine the extent and depth of the various strata of shale and to secure samples which later were treated in the laboratory by a competent chemical engineer, with the assistance of laboratory chemists, in order to determine the quantity and quality of the oils that these shales will yield under proper treatment. However, let us consider that there are only fifty feet of shale that can be mined economically. Each acre contains 2,000 tons of shale for each one foot depth of shale, therefore a fifty-foot depth of shale contains 100,000 tons of shale, or 100,000 bbl. of oil per acre. Accordingly, in Garfield County alone, there is available twenty-three billions barrels of oil—more than four times as much oil as has been taken from the ground in all this history of oil. Also, on the same basis, there are in the shale mountains of Colorado and Utah three hundred trillion barrels of oil, and even this stupendous figure is, figuratively, "only a drop in the bucket," for there are immense deposits of oil shale not only in many other States of the United States, but also tremendous deposits in Brazil and other South American countries, in Australia, New Zealand, Russia, Canada, etc.

Certainly we have available sufficient raw material to produce the required oil for the civilized world during the next several thousands of years.

Manufacturing Process

Manufacturing Process—Our third essential:

Under this heading must necessarily be considered first the subject of "Retorting"—the manufacture of the crude oil—and second, the equally important subject of "Refining," each being a distinctly separate problem as applied to shale oil.

Retorting Process—During the past three years, the period in which greatest consideration has been given to production of oil from shale, there have developed numerous so-called "shale engineers," and an equally great number of "shale processes." Some of these processes are the result of intelligent research, and will no doubt produce oil commercially and economically; others are merely experiments with mechanical apparatus and are destined to failure because they are not so constructed as to bring about certain predetermined results or conditions. To a very large extent the latter class is due to the fact that their inventors have taken it for granted that because oil has been made successfully for many years from the shales of Scotland, France and other countries of the Old World, it is only necessary to adopt the same or similar methods of treatment as have been in use for as much as seventy years in these older shale fields, but little, if any, consideration having first been given to the fact that our American shales are of an entirely different character from those, for instance, of Scotland, and that even in America there is a vast difference in the character of the shales found in different districts.

Successful and profitable operation in any line of manufacturing can be hoped for only after having first determined, by necessary scientific research, not only the ultimate result or product desired but also just what definite operations or conditions must be brought about in order to convert the raw material into the finished product; and the designing of successful mechanical apparatus for producing the desired finished product could only be the merest accident unless preceded by such scientific determinations.

In the brief space which it is intended this discussion shall occupy, it is impossible to treat thoroughly with the chemical problems or considerations involved in the conversion of solid hydrocarbons, as found in bituminous shale, into shale oil, but it can be safely stated that chemical research finally leads to the necessity for mechanical apparatus that will provide in operation these two essentials, as nearly as possible:

Perfect heat application;

Perfect heat control.

Perfect heat application, in this case, must mean the most economical and uniform application of heat practically possible, not merely to the outer surface of lumps of shale, nor yet to the exposed portions of a mass of finely ground shale, but rather to the entire surface of each particle of shale of sufficient fineness to quickly absorb the heat that is necessary in its reduction. As an illustration, let us suppose that we make an experiment with the use of two small metal crucibles or roasting pots, each the size and approximate design of an ordinary pint tin cup, each having a cover fitted so as to cause the crucible to be perfectly air tight and gas tight. We will heat both crucibles to the decomposing point of a certain shale, which may be, say, 770 deg. Fahr. Also we have two cubes of shale, each measuring one inch in every dimension; we will divide one of these cubes into sixty-four smaller cubes, each measuring one-quarter inch in every dimension. We then place the one-inch cube in crucible "C" and the sixty-four quarter-inch cubes in crucible "M." The shale in "C" obviously has exposed to the heat six square inches of space only, while the shale in crucible "M" has exposed to the heat ninety-six square inches of space (provided, of course, that the sixty-four cubes in "M" are placed and maintained practically in suspension and not in a pile or mass). If we can devise some mechanical means for maintaining the shale in "M" in a state of practically constant suspension, thus allowing an application of the heat to each of the six sides of each of the quarter-inch cubes, it is obvious that we will be applying heat to sixteen times as much shale surface in "M" as is being applied to the shale surface in "C," and the result must be a more rapid, economical and uniform heat application, and at the same time a more perfect heat control. If our mechanical apparatus in a retort corresponding to crucible "M" is sufficiently perfect to keep the small cubes in practically a state of suspension, each particle suspended independently of each other particle, and if our shale in such a retort were crushed to a sufficiently small size it is easy to conceive of our being able to apply heat to shale in such a manner that the shale would, almost instantaneously, absorb the exact amount of heat necessary to its reduction, and also that there would be no necessity of furnishing or maintaining in the retort any heat whatever

in excess of that actually absorbed by the shale in its reduction.

A mechanical apparatus which will bring about and maintain the conditions and action just outlined, must, then, be the ideal apparatus or "retort" for extracting oil from shale. Such a retort will, of course, be "most economical" in fuel consumption because it required (with a properly designed and insulated furnace) only that amount of heat which the shale actually absorbs in its reduction. Such a retort will necessarily have the greatest possible capacity, as heat is applied quickly to the minutest particle of shale, and accordingly a maximum amount of shale can be passed through the retort and reduced in the shortest possible time. Also, such a retort, if designed to take off the oil vapors as fast as generated, and at the exact temperature at which they are generated, must make possible "perfect heat control," as there will be maintained within the retort only the degree of heat that is required, no greater and no less.

Such a retort certainly should be the height of efficiency, as it will produce the greatest quantity of oil in the least time and at the same time will evolve and take off for condensation the hydrocarbon gases in such manner as to produce the best quality of oil.

Of course, such a retort should perform other necessary functions, all tending to the ideal conditions named, such, for example, as maintaining the inner portion of the retort free from carbon; the charging of the shale and discharging of the spent shale should be continuous and automatic; also the construction cost, maintenance cost and operating cost should be comparatively small.

Has there been evolved a retort having all these requirements? And has such a retort been satisfactorily demonstrated in the field?

On April 19 last, something over 150 business men from various parts of Colorado witnessed the first public demonstration of the plant of the Monarch Shale Oil Company (using the Ginet process), located thirteen miles north of De Beque, Col. Among those present were the mayor, and the secretary of the chamber of commerce, both of Grand Junction, Col., the mayor and president of the chamber of commerce of De Beque, Col., and the cashier of the Bank of De Beque all of whom expressed themselves as thoroughly convinced that at last a shale oil process had been evolved which actually does extract oil from shale in commercial quantities, and they went so far as to affix their signatures to the following statement:

Monarch Camp (De Beque), Col.
April 19, 1921

To Whom It May Concern:

This is to certify that at the demonstration of the shale oil plant, located thirteen miles north of De Beque, Col., on this date, we personally measured the oil as it came from the spout, and the flow was continuous and at the rate of two gallons each minute.

Chas. E. Cherrington,
Mayor of Grand Junction, Col.
H. A. Hanson,
Mayor of De Beque, Col.
W. P. Ela,
Secretary, Chamber of Commerce,
Grand Junction, Col.
H. A. Quigley,
Cashier, Bank of De Beque.
C. G. Haley,
President, Chamber of Commerce,
De Beque, Colo.

There were also present at this demonstration two representatives of the Denver & Rio Grande Railroad. They, too, were evidently thoroughly convinced that the Ginet retort had demonstrated in a thoroughly practical manner that oil could and would be made from shale in commercial quantities, because they immediately recommended a reduction in rates to encourage the enterprise, and their company has already reduced the rate on crude oil from De Beque to Denver from 86 cents per hundred pounds to 34 cents per hundred. Also on being informed of the necessity for a new side track at a location near De Beque, where oil could be loaded into tank cars by gravity from the storage loading tank now being provided, they sent their engineers and division superintendent to De Beque, made the necessary survey, and arrangements have now been made for the construction of the siding. Railroads do not reduce rates nearly two-thirds and build new sidings unless there is something substantial and convincing to justify such action.

Operated for Twenty-nine Hours

The Monarch plant was operated continuously for twenty-nine hours and then was ordered shut down because of lack of tankage in which to store the oil being made. Several subsequent demonstrations of the plant have been made for the benefit of visitors from practically all parts of the United States, and the results have always been the same—three barrels of oil per hour.

The Monarch plant actually makes oil at the rate of two gallons per minute, or three barrels per hour, or seventy barrels per day, and a preheater is now being installed which will increase this daily output of one retort to approximately 105 barrels.

We have just leased, for a term of years, the Apex Refinery, located at Loomis, just outside of Denver; also three tank cars for transporting oil to be made at the Monarch plant to the Apex Refinery, commercial operations to be started just as soon as the necessary railroad loading facilities are provided.

The shale oil made by the Ginet process has been tested by many responsible institutions and has been found to be of a very high grade. The chemical department of the Carnegie Institute of Technology, Pittsburgh, Pa., has written in acknowledgment of the receipt of a sample of our shale oil, stating that "of the various shale oils tested by this institution yours is by far the best in every respect."

Can oil be made from shale in commercial quantities

The above facts can hardly be considered other than a definite and affirmative answer—it can because it has been and is being done.

Can shale oil be manufactured economically?

With the Ginet process the cost of producing shale oil is now $1.56 per barrel, and this figure will be materially reduced when operating on a larger scale.

Can shale oil be refined into salable products?

While perfecting our shale retort and building our

(*Continued on page* 80.)

Coke Business Carried Gas Sales

Why Gas Is Cheap in Indianapolis

The efforts of the Citizens Gas Company, of Indianapolis, to discuss its coke problems with its consuming public—the consuming public for its by-product gas—so that growing dissatisfaction with company procedure might be allayed and former "good-will" for the company return in the community, are being continued through the series of statements which the JOURNAL formerly has outlined.

The ninth of the series of statements in campaign of education was devoted to "Coke Price Policy" and it showed how "coke could be made very cheap in Indianapolis, if the consumers of gas and the public authorities should decide to let gas carry the burden." Then the company drove home the moral: "Gas has been cheap in Indianapolis because our coke business has been able to carry the gas business." This statement is the secret, in terse words, of the gas situation in Indianapolis, which has drawn the attention of gasmen through many years to the unusual ability of the big Indiana utility to continue to furnish its patrons with 60-cent gas, even during the war period. Just recently the company had to come before the Indiana Commission and ask for a higher rate, which was given. This necessarily led to disappointment among the patrons and matters arising out of this disappointment eventually reached a point where the company started in to tell its public the exact truth about its entire operation, although the coke by-product side of the story necessarily had to be "featured" in order to drive home the various "morals" relating to the gas situation itself.

The man who is not afraid of his shadow is the man who eventually wins out, provided he has right on his side. That evidently is the way the Citizens Gas Company of Indianapolis reasons in going to the public with its story. There can be no doubt that victory will come to the company eventually.—Editor.

Under "Coke-Price Policy," the company said:

"We are frequently confronted with the complaint that the price of by-product coke for domestic use is too high.

"There are those who think that we should sell coke at less than cost and still keep the price of gas lower than it is in any other city. A little reflection must convince any fair-minded person that such a policy is impossible.

"This company was organized to give the people of Indianapolis gas at the lowest possible price. It was not organized to provide the people of Indianapolis with cheap coke, or cheap coal, or cheap motor fuel, or cheap sugar, or cheap milk. The exceptionally low price of gas in Indianapolis was possible only because we could sell our other products at remunerative prices. The price of gas is regulated by public authority. The prices of all of our other products are regulated by economic laws. Our coke service is not a public utility service but a purely commercial business conducted in highly competitive markets. We have always conceived it to be our duty to obtain for our coke the highest prices consistent with good commercial practice. That has not meant the highest price we could get at any given time but a price which would yield a reasonable return and enable us to establish and maintain mutually satisfactory relations with the numerous customers required to absorb our output. That we have succeeded reasonably well in developing our business under our price policy is shown by the fact that our sales have grown from 4,000 tons in 1909 to 487,000 tons in 1920. We have recently shown how our domestic coke business in Indianapolis has grown.

"Coke could be made very cheap in Indianapolis, if the consumers of gas and the public authorities should decide to let gas carry the burden. Gas has been cheap in Indianapolis because our coke business has been able to carry the gas business. This arrangement might be reversed so that coke would be cheap in this city because the gas consumers had agreed to carry the coke business. Practically everybody must use gas and has to get it from this company. Nobody has to buy any of our coke. It would greatly lighten our labors and simplify our business if the gas rate were made high enough for us to sell our coke at $1 per ton. It would be easy for us to sell our coke under such conditions, but from the point of view of public policy such a plan is too absurd to be considered.

"Or, coke could be made very much cheaper if the taxpayers were willing to carry the business. Last year we paid in local taxes 60 cents for every ton of coke we sold. For every ton of domestic coke which we sold in Indianapolis we paid $8 in local taxes. If the public should see fit to relieve us of taxes, we would pledge ourselves to distribute $300,000 to the Indianapolis users of our domestic coke in proportion

to the amount they use this year. This, again, would make our labor of selling coke much simpler than it now is but, as in the other case, it would be in conflict with sound public policy.

"Unless either the gas consumers or the taxpayers carry our coke business, we can conceive of no other way of handling it except on a commercial basis, as we have always done in the past. Our commercial policy has enabled us to build up a large coke business which has made it possible to supply gas at a remarkably low price. For two or three years the price has been too low for our coke business to carry our gas business and provide facilities for the proper expansion of the latter. At present our coke business is suffering from the severe business depression and a temporary increase in the gas rate has been authorized because temporarily the coke business cannot carry the gas business. It could never again help to keep the gas rate low—but, on the other hand, would make it necessary for the gas rate to go much higher—if we were to abandon sound commercial practice in selling our coke in any of our markets."

Domestic Coke Prices

In its next statement to the public, the company discussed "Domestic Coke Prices in Indianapolis," and set out specifically the factors that have determined prices for the coke output utilized in its home city. It said:

"We explained yesterday that we have fixed our prices for domestic coke in Indianapolis, as for all grades of coke in all markets, on a commercial basis: and in our two preceding statements we had shown how our local domestic business has grown. We desire now to explain what, specifically, has been involved in reaching prices on such a basis.

"1. Experience has shown that a by-product coke plant must obtain at least as much for its coke as the cost of coal out of which it is made in order to exist. Under present conditions of operating costs and markets for by-products, it must obtain some margin above bare coal costs in order to obtain a reasonable return. In general, it may be said that we have considered the cost of coal as the minimum price which we could put on our coke under normal conditions.

"2. The maximum price which we would consider for our domestic coke under normal conditions is determined by the competition of anthracite coal. Although good by-product coke has higher fuel efficiency, ton for ton, than anthracite coal, we consider it necessary to name a price lower than the anthracite price; first, because an established preference must be overcome and, second, because dealers must have a larger margin for handling coke than coal because the former is bulkier. Generally, we have considered a price of $1.50 per ton below the anthracite price at the dealer's switch about the normal maximum price for our domestic coke.

"3. We have considered it necessary, also, to take into account the competition of the better grades of bituminous coal. The price of by-product coke cannot be made as low as the price of the highest grades of bituminous coal, and cannot approximate the price of the lower grades. The first principle of our price policy as given above explains why we cannot sell a ton of coke at the price of a ton of soft coal. Nevertheless, since we are anxious to displace soft coal as well as anthracite coal to the greatest extent possible, the prices of the former have to be taken into consideration, with the result that we make our maximum price lower than it would be under our second principle when we can do so without conflict with our first principle.

"4. Although we can never for any considerable period sell our coke for less than the cost of the coal out of which it is made (and must average somewhat more than that cost), sound commercial policy justifies exceptions from this rule for short periods under two sets of conditions: (1) As a phase of advertising, a cut may be made in the hope of developing new business which can be held after a normal remunerative price is restored. (2) In dull times when large stocks accumulate, a cut may be justified to relieve the financial strain which such business conditions put on us. For these reasons our general price policy has been modified on more than one occasion, but such cuts below cost of coal could not be kept up without disaster. These are not normal prices.

"5. In times of great scarcity the competition of anthracite coal and even of much bituminous coal disappears, thus removing temporarily that check on our maximum prices. But we have never advanced our prices on account of such temporary lessening of competition because we are in business to stay, and desire to have our local domestic coke business enjoy a wholesome growth. We, therefore, still bear in mind the future competition of the fuels which have temporarily been withdrawn from the local market, and to hold our prices far below the point to which famine conditions might put them.

"Just at present our prices are being regulated by the fourth principle stated above. We are selling our coke at fully $2 per ton under the cost of the coal out of which it is made, and our differential below anthracite coal is more than double what we consider normal. We are doing this to meet present financial emergencies and in the hope that the relatively low price will extend the use of this fuel. Of course, such a price cannot long continue unless the cost of coal drops far more than can now be anticipated—or unless the gas consumers or the taxpayers undertake to carry the business, which is quite improbable."

Then the company took up in daily installments, the question of "Why We Do Not Go Into the Retail Coke Business," as follows:

"We are frequently asked why we do not sell coke at retail. Inquirers assume that we could thus increase the use of our coke in Indianapolis and let the consumer get it at a lower price without reducing our own net return. We shall be as explicit as possible in giving our reasons for not adopting this policy.

Investment Required

"First of all we must call attention to the investment required to do this work successfully. We might buy two or three trucks and make deliveries direct from our plants; but that would amount to little more than local peddling, it would reach only a small fraction of the people now using our coke and would cut us off entirely from the others because the dealers who now sell our coke at the rate of 40,000 tons or more annually would no longer handle our product at all if we should enter into such competition with them.

"To go into the retail coke business at all, we should have to go into it right. This would involve an investment in the following facilities:

"1. At least a dozen distributing yards located on railroad sidings. Except to very limited areas we could not give good service by hauling directly from our plants. Neither could we compete successfully with other coke or coal which came to dealers' yards by railroad, if we attempted to haul to all parts of the city by team or truck. Railroad charges are much lower than teaming and trucking costs, even when teaming or trucking is necessary for the final delivery. The dealer who most fully covers the city at present has ten yards, and many others have several yards each. We could not compete successfully in the retail fuel business with fewer than a dozen distributing yards. These would require a heavy investment and would be hard to get at any price.

"2. Each yard and our present plants would have to be equipped with bins, sheds, tracks, scales, stables, garages, offices, and especially with teams and trucks. This equipment would require an additional heavy investment.

"3. To conduct the retail coke business successfully, we should have to carry a complete line of fuel. Naturally, we would push coke as, perhaps, no retail dealer now does, but we should have to recognize the legitimate uses of other fuel. We would be discredited as coke merchants if we could not supply practically all fuel demands. Furthermore, proper equipment for handling coke would not be fully employed on coke alone. While trying to restrict our dealings in coal and wood as much as possible, we should still be forced to carry stocks which, in the aggregate, would involve a considerable further investment.

"4. It is seldom possible—in Indianapolis or any other city—for the retail fuel dealer to confine himself to fuel alone. The small proportion of fuel bought during the summer months would mean much idle equipment and heavy overhead in those months, or else inadequate facilities for handling the winter business. Our yards would enjoy no special advantages. In order to carry the business through the summer months we should have to take on the usual side lines of building material or ice. That would mean a still further investment in merchandise or even in manufacturing plants.

"Now it happens that we have never had capital enough to conduct our present lines of business as we think they should be conducted to realize the greatest economies or to render the best public service. We have made no estimates of the capital required to go into the retail fuel business. The mere statement of the problem is enough to convince almost any intelligent person that for us it is purely academic. It simply can't be done. If any friend of this company or well-wisher for the community thinks he could distribute our domestic coke better than some sixty-five dealers are now doing—if he can show that he is able to provide the capital and the organization to carry on the retail fuel business as he thinks we should do it, and furnish us a better local outlet for our coke than we now have—we will give him the exclusive agency to handle our product in this city for the benefit of the inhabitants and his own profit.

"Yesterday we gave an all-sufficient reason for not going into the retail coke business—lack of money. No further discussion is necessary from a practical point of view. But for the further information of persons interested in this question we will give other reasons. Suppose we had ample capital, would it be wise to embark in this business?

"No other objections are as weighty as the one we gave yesterday, but there are others that would be well worthy of consideration even if we had the necessary capital.

"Could we sell more domestic coke in Indianapolis than existing agencies are doing? Possibly we could. Our main interest being the development of our coke market, it is certain that we would push the retail coke business as no dealer now feels justified in pushing it. Although our retail fuel department would have other fuel to sell, it is not likely that we would ever let anything else interfere with constant and consistent efforts to extend the use of coke.

"At the beginning, and perhaps for several years, it is probable that our local coke sales would not be greater than they would be under our present methods. Undoubtedly, more coke would be used in Indianapolis from the very beginning, but the excess would probably not be our coke. We could not expect to be both wholesalers and retailers. Every one of the sixty-five dealers who now handle our coke would promptly secure some other coke to sell in competition with ours. We may not always be satisfied with the way the local dealers push our product: but substantially all of the coke sold in Indianapolis is our coke, except when supplies are cut down by conditions beyond our control If we should retail the coke ourselves, none would be sold except what we could sell ourselves, while our own activities in popularizing coke would force the dealers to get other coke to compete with ours.

"This would be good for the coke business, but not good for our coke business. Our dozen or more yards with the best selling organization we could get would not be likely to sell as much coke in the first year or two as we are now selling through sixty-five dealers, some of whom maintain nearly as many yards as we would establish and most of whom have built up strong trade connections.

"Ultimately (if we had the ample capital which we are assuming) we could doubtless drive many of our competitors out of business and build up a larger local coke market than we could otherwise establish. But unless the coal dealers of the city should undertake to boycott our coke, we do not believe it would be sound business policy to attempt to extend the use of coke in this manner.

"Again continuing the academic discussion of the wisdom of going into the retail coke business (which we haven't the money to go into), we come to the real question of public interest. The average critic of our local coke selling policy has no interest in the question of investment required and does not care whether we sell much coke or not; what he is interested in is getting his own fuel at the lowest possible price.

"Could we conduct a retail fuel business on a smaller margin than the present retailers require?

"Our answer to this question must be much like our answer to the query whether we could not sell more coke than all of the dealers do. Possibly we could conduct the business on a smaller margin after getting it well established, if we could provide ample capital for the most modern equipment and could run it on a large scale under efficient management.

"The retail fuel merchants of Indianapolis, who have made a very large investment in the yards and equipment used in their business and who have devoted many years to the development of their busi-

(*Continued on page* 81.)

Would Invite Commissions to Participate

Advocates Extension of Gas Association Work

By S. E. DE FRESE

General Manager, Chattanooga Gas Company

Apropos of the times, the writer would indulge the consideration of the readers of this article, which is calculated in part to vary from the beaten paths and the customs of gas associations in obtaining results of which it is the aim of such organizations.

It would appear reasonable to the average person, and particularly to those trained in the arts of domestic economy, that economy must follow waste.

The events transpiring during the past few years, growing out of the World War, have shown the possibility of waste and extravagance are perhaps without a parallel in the history of modern civilization.

Like peace follows war, so must economy follow waste. If it is true that a forecast of the future must rest upon past experience, then to-day and for years to come these facts will be met with in the endeavor of those intrusted with the welfare and comfort of the people; nor can they be disregarded in the adjustment of conditions from which it is our aim to prosper and to cause others to prosper.

The production in huge proportions of all articles of commerce, resulting from intensified energy during the period referred to, because a source of great waste, and waste has contributed largely to our present discomfiture. During the moments of sober reflection we have taken stock of this situation, and the swing of the pendulum returns to the point furthest from waste in our efforts to economize.

That these subjects should be treated by the thoughtful mind, is not surprising; in fact, it is becoming a custom, and due consideration will be given to the ideas of those who have something of value to offer on the subject of economy.

The writer has been much interested in a paper which bears relation to the writer's subject, prepared by E. L. Richa, of Baltimore, and who, in person, read this paper at a meeting of the Southern Gas Association at Savannah, Ga., May 31, 1921.

Mr. Richa's paper will receive widespread publicity. It has been published in the JOURNAL June 11, 1921, and therefore it is unnecessary to repeat what has been said and written by Mr. Richa. Mr. Richa points to an ideal condition in the gas industry; one perhaps which many would like to adopt. But assuming that Mr. Richa's ideas are correct, and the application of them practical, there are many obstacles in the way, and among them, of no minor importance, is the lack of understanding of the subject on the part of the public, local municipal authorities, and last, but not least, the regulatory bodies; our friends, the public utility commissions.

While it is my opinion that a paper of this sort yields valuable information to those engaged in the gas industry, its full value or the value of similar papers, will not be realized until there is a better understanding by all parties concerned, and the co-operation which cannot be secured except through educational channels.

Should we classify those vitally interested in the conversation that Mr. Richa treats and in the economy which he so lucidly explains, we would point to four distinct bodies of people interested in public service work: The people who receive service; the company delivering service; municipal authorities, and public service commissions.

Perhaps it will not be denied that the successful outcome of a public utility undertaking depends largely, if not entirely, upon the co-operation received from these four groups. Lack of co-operation as a rule is detrimental to a public utility undertaking, and is usually the result of a lack of correct information on the subject. Therefore, failure in the main can be traced to lack of knowledge on the part of all interested parties of the position a public utility should occupy with relation to public interest. In these days of regulation, a public utility functions only at the will of public utility commissions, who in turn are to a degree related to municipal authorities, who in turn are responsible to the public. Assuming that this is a fact, it must necessarily follow that each of the four groups should at all times work in the interest of each other, and this cannot be done unless all are acquainted with the facts dealt with.

Gas associations are purely educational bodies, and the scope of the work is confined largely to its members. When these associations meet in convention the part taken in the work by municipal authorities usually consists of an address of welcome to the city by the mayor. The interest of the public in the work is usually confined to the entertainment feature. On rare occasions a representative of the State Public Utility Commission is present. In the writer's experience, covering a good many years, he has met on one or two occasions representatives of public utility commissions. He has never met a public utility commissioner and, inquiring into this subject, finds that a variety of excuses are offered for the failure of such regulatory bodies to be in attendance. Were it possible, and I believe it is, to secure an audience at such conventions, composed of intelligent men who are interested in public service work, the educational feature of the association work would be greatly enhanced. It would do much, in my judgment, to mitigate the trouble of isolated companies in dealing with these organizations, and, therefore, the idea which the writer attempts to convey is that association work should be extended to take in a generous sprinkling of the interested parties. The aggressiveness of public agitators and designing politicians has in many, if not the majority of cases, come from their ability to take advantage of a situation when the public do not know the facts.

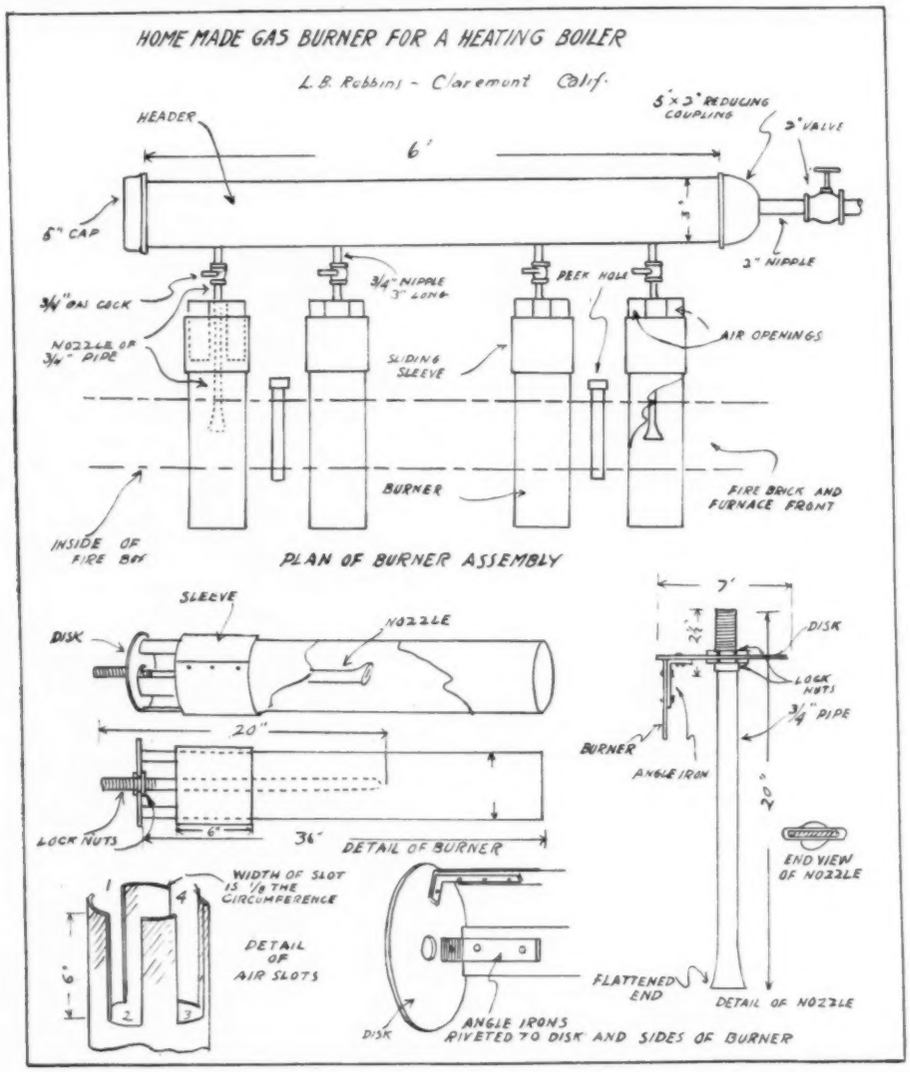
Public agitators and designing politicians are awake to the fact that the public know little indeed about their public service companies, and as a consequence lead them far afield from the truth and facts.

May we, therefore, approach an extension of gas association work; broaden the field, so speak. Let us center around the word "public," and believe the great American public are a most fair-minded organization, once they know the facts.

Home-Made Gas Burner for a Heating Boiler

Gas Comes to the Rescue During a Critical Time

Here is a most convincing argument for the sale of gas for industrial fuel. While the necessity forced this customer to great lengths, the result obtained more than justified the use of the expedient. Incidentally, we would like to call attention to the burner itself.—Editor.



In a large heating plant attached to a Western college, one of the oil burners went out of commission at a time when the weather turned cold and the maximum amount of heat was needed. This necessitated the improvising of some sort of a fire and on short notice as only two out of the three boilers could be operated. The engineer therefore put on his thinking cap and devised the gas burner described in the following pages. He set the entire boiler room force at work upon it and had it operating in thirty-six hours. It has proven so satisfactory that it has been kept in almost constant use for three months up to this writing. It uses natural gas at six pounds pressure (or artificial) and gives a fire of tremendous heating capacity—little noise and of great economy. Ordinarily but two of the four burners are kept in operation, so great is the heat generated. With all four burners going at full capacity this burner will generate sufficient heat to keep a 300 h.p. boiler at full load.

The four burners operate from a header connected directly to the two-inch gas main. This header was

made from a piece of five-inch iron gas pipe cut six feet long. One end was capped and the opposite end fitted with a five by two inch reducing coupling. A short nipple and a valve were used to connect this end to the gas line.

First the width of the fire doors was obtained and then the distance between them. These measurements were used to determine the points at which the burners were to be tapped into the header. These measurements would, of course, vary with various makes of boilers. Then a chalk mark was stuck along the side of the header, parallel to its sides and punch marked where the holes were to be drilled for the burners. These were then drilled and tapped for three-quarter-inch pipe. Into these holes were then threaded four three-quarter-inch nipples three inches long, and a three-quarter-inch gas cock threaded onto each nipple. When this was completed the header was set up in position in front of the fire doors by iron brackets arranged to hold it solidly in position. The gas cocks pointed exactly horizontally into the fire doors.

The burners were made of six-inch steel irrigation pipe found lying about the college grounds. The tar covering was removed and four good sections, thirty inches long, were cut out of it. One end of each piece was cut down for a distance of six inches into four slots. This was done by marking off the circumference of the pipe into eight equidistant points and sawing down at right angles with a hack saw. Then the four openings were made by cutting out the bottoms between the ends of the cuts with a cold chisel and hammer.

Next, four sheet-steel discs were made seven inches in diameter with a seven-eighths-inch hole in the center. One disc was fastened over the ends of the slots in each burner by riveting on with four angle irons as indicated.

Lastly, a sheet-steel sleeve was riveted together six inches wide and slightly larger in diameter than the burner so it would slide down over it and bear against the disc, thus closing the four slots. By sliding the sleeve back, however, the openings could be opened any size desired.

The nozzles consisted of four pieces of three-quarter-inch pipe. One end was threaded for two inches and the opposite or nozzle end was heated in a plumber's torch and hammered flat so the resulting slot measured one-eighth inch wide.

A lock nut was threaded on to each nozzle as far as it would go and the nozzle slipped inside the burner, slot towards the round end. Then the threaded end of the nozzle was brought back through the hole in the disc until it brought up against the lock nut. A second lock nut was then threaded on and tightened up against the outside of the disc thus holding the nozzle securely in position.

This completed the assembling of the burners, the various phases of construction of which are illustrated in the detail sketches.

Fire brick was laid in the fire doors at such a height that it would support the burners horizontally after they were in position. This was done, of course, by threading the projecting ends of the nozzles into the gas cocks, being careful to leave the flattened end of the nozzles all in the same position, preferably horizontal. When everything was in its proper relation, the rest of the fire brick was mortared in place so the entire door was closed up tight. A peek hole of one inch pipe was inserted in the mortar between each pair of burners. A cap loosely threaded on served to cover the opening when not in use.

These burners are lighted by inserting a piece of burning paper in the air slots, then turning on the gas at the cock. The gas pressure, opening of the air slots and the gas cocks determine the intensity and color of the flame. Burn as blue flame as possible for the greatest heat.

Valuable Data

Industrial engineers who have to compete at times with pulverized coal will find the following data of value:

Preparing Pulverized Coal

The cost of preparing coal in the power plant of the Clarkdale Smelter during 1920:

Unloading, storing and reclaiming coal, per ton	$0.07
Primary crushing and conveying, per ton	0.09
Drying and disintegrating, per ton	0.30
Pulverizing, per ton	0.52
Total operating costs	$0.98

Depreciation and other fixed charges are not included in the above, the figures including labor, power, repairs, supplies and plant expenses. The installation costs of a pulverizing plant are said to be as follows:

Storage and reclaiming plant, per ton storage capacity	$13.00
Primary crushing plant, per ton daily capacity	32.00
Drying and integrating plant, per ton daily capacity	286.00
Pulverizing plant, per ton daily capacity	402.00

The investment with a 300-ton plant, with a seven-day storage plant, would be about $243,000. If depreciation, interest, and taxes, are taken to equal about 15 per cent, the fixed charges per ton total $100 per day, or 33 cents per ton. The entire pulverizing cost then becomes $1.31 per ton.

An Expression of Opinion

In the July 9 issue of the AMERICAN GAS JOURNAL, regarding the legislative action to be taken in connection with the tariff on oil, an expression on the question is asked for. The following oil field note recently made public applies to Mexican oil tariff.

"It is the opinion of A. J. Degenther, secretary of the Penn-Tex. Company, that the heavy importation of Mexican oils during the past year has brought about the present demoralized condition of American oils, statistics for May showing that the crude oil stock, including imports, increased 8,224,000 barrels, while in the same month 9,100,000 barrels were imported into the United States. Under a 35-cent tariff it would cost Mexican producers about $1.60 per barrel to lay down Mexican oil in the United States. With Mid-Continent oil selling at $1 per barrel, it can readily be seen that the domestic producer would be helped considerably by the proposed tariff."

Progress in England in Wood Distillation

Activities and Their Results Abroad

By MARK MEREDITH, Liverpool, England

Wood distillation means the carbonization of wood in closed vessels or retorts, condensation of the products of distillation, and the subsequent refining and treatment of these products. The crude products of this treatment of wood are charcoal, gas, wood, oil, wood tar and pyroligneous liquors yielding wood spirit or methyl alcohol, acetone, acetate, etc.

Probably one of the most familiar scenes to the eyes of our forefathers in rural England of the olden time was the charcoal burner following his peaceful avocation of dissipating into thin air some of the most valuable products of the soil. Of course, he did not know what he was doing and had no means of finding out; but is it not a "burning" shame that we, with all our accumulated stores of scientific knowledge, should still continue to waste the natural resources of the country as we certainly do? The war has cost England dearly—time alone will show the extent of our loss—but the extent of our gains will largely depend on our promptness in taking hold of the situation and turning these gains to account.

Among the gains, or what assuredly will become gains if due advantage is taken of them, probably the most important and far-reaching in these days of scientific progress is the knowledge, acquired at an enormous cost, that we have brains fully as capable of turning science to commercial account as any other race, and perhaps chemical science even more than other branches.

Another most important piece of knowledge gained is that within the country are natural resources which, scientifically utilized, will give us a great advantage over our rivals in the stern commercial war which is beginning to be realized as the inevitable sequel to the physical war from which the world is now emerging.

Our home-grown supplies of wood are a far older source of national revenue than coal; but just as we have failed to use our unrivaled coal supplies to the best advantage by exporting a large proportion of the valuable by-products of coal distillation, coal tar, anthracene and other residues from gas making, to be converted into aniline dyes and other chemical products, so by continuing to import products of wood distillation we are imposing an additional handicap on ourselves in the commercial struggle.

Moreover, in both cases we are assisting in building up vast chemical organizations capable, on the shortest notice, of conversion to the production of various forms of offensive and defensive weapons of modern warfare, the control of which, especially during the earlier stages of war, more than once brought the enemy within sight of success and ourselves in sight of disaster.

Shortage of Acetate of Lime

Among the earliest points of danger disclosed was the fact that the explosives department foresaw an immediate shortage of acetate of lime, an indispensable ingredient in most all modern explosives, our whole supply of which had been obtained from abroad. To meet this danger factories were erected by the Government and by the end of the war a large amount of experience in the process of wood distillation was gained; so much so that even after the armistice the erection of two of these factories, then in progress arrived at in the earlier ones, was continued with the intention of carrying on the distillation of wood as an industry of national importance.

In considering the establishment of any new industry, or one involving the manufacture of products of a more or less new character, one of the greatest difficulties is to ascertain the extent to which such products can be marketed and their market value level. For instance, in the case of the dye industry it proved to be most difficult to ascertain with any degree of certainty the quality of any particular dyestuff or intermediate for which this country afforded a ready and permanent market and the economic price which could be regarded as its permanent selling value.

It was also obvious in many cases, but not by any means in all, that any reduction in production cost would either stimulate the existing consumption or would create in effect new sources of consumption.

With the wood distillation industry these factors have even greater weight, from the fact that many of the products of distillation are in a commercial sense still in their infancy. Even in the case of charcoal, though one of the oldest known forms of heating agents, it seems more than probable that potential sources of consumption for various uses can only be discovered by, in the first instance, indicating the possibility of an assured and permanent increase in the existing supply.

This is particularly the case under the present condition of rapid and unprecedented development in all chemical industries in Great Britain, and it is probable that, in addition to the use of charcoal for the reduction of iron ore, for fuel purposes, for domestic and other uses, for the manufacture of gunpowder and explosives, for refining purposes and for medical use, a number of other possibilities of consumption in general chemical manufacture remain to be developed.

The particular methods of distillation employed are to some extent controlled by the products it is desired to secure, and in the case of the wood distillation factories erected by the Government the process employed was designed chiefly with a view to the production of acetate of lime. The broad principles, however, remain the same; and, whatever the methods of treatment employed, the crude products of wood distillation, apart from charcoal, remaining after carbonization of the wood are gas, wood oil,

(*Continued on page* 82.)

American Gas Journal

SIXTY-SECOND YEAR

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As the Journal Views It

Spreading the Word

From time to time the AMERICAN GAS JOURNAL has expressed its opinion of the absolute necessity for gas companies to keep their customers informed as to the developments in the company. This usually has been described as good-will building, and that number that have recently decided as to the methods to be used in conducting this work. All of this is a step in the right direction, but until a large majority of the gas companies in the United States are actively engaged in educating their consumers regarding gas and its uses and the problems of the gas companies it cannot be said that great progress is really being made.

Frequently a statement is made that certain companies are exceptions to this rule because of local conditions, but this statement is erroneous; for no company can survive in the long run unless it has won the good-will of its consumers, and the only way this can be done is by laying the cards on the table. Those companies that feel that they are the exception to the general rule usually are among the smaller companies, and the statement is based on the fact that they are not able to afford to pay for the services of a man who will devote his time exclusively to this work. This is very true; but there are means at hand which will allow for the companies to keep within their required expenditures and yet carry on this work.

That the attitude of the JOURNAL is the right one is shown by the statements recently made by various public utility commissions in different parts of the United States regarding this important subject. One of the commissions, in making a ruling in which an

increased rate was allowed, practically ordered that the company devote a certain part of the increased revenue to this important work. In discussing this matter with a commissioner a representative of the AMERICAN GAS JOURNAL was told that instead of frowning upon this good-will-building work the company welcomed all such efforts; for, as the company pointed out, the more information the public has regarding the activities of the gas companies—or, in fact, any public utility—the easier is made the work of the company. He stated that the makings of rulings would be simplified, and that the public could be and would be more in sympathy with the problems which not only gas companies have to solve but which frequently must be solved by commissions.

Perhaps one of the best examples of active work along the lines of educating the public is the advertising campaign which is being carried on by the Citizens Gas Company, of Indianapolis, Ind. This company has certain methods of doing business and, because the public does not generally understand the underlying reasons for certain moves, it is constantly under the fire of criticism from different sources. The company to-day is carrying its story to the public. In bold strokes it is painting a vivid picture of its many problems. The company is now progressing and it may safely be said that it will be successful. Because of the importance of the matter, and also because it is felt that perhaps it would be a great benefit to all gas companies, the JOURNAL is devoting considerable space to the subject. There have been received by the JOURNAL many comments regarding this important work, and many questions have been asked in connection with it. It is the hope of the JOURNAL that it will succeed in influencing other companies to join in this general move toward obtaining better understanding from the public.

Valuing Public Utilities

What does it mean to a community to suddenly go back to the primitive where electric, gas, transportation and telephone service do not exist? Pueblo, Col., went through this experience recently when the great flood enveloped the city. The city's newspapers commented at length on the experience. The Pueblo *Opinion* in an editorial said:

"Few cities of to-day realize what it means to be suddenly cut off from all public utilities. But Pueblo on the night of June 3 had no water, no gas, no electric lights, no street cars, no telephone service and no railroad connection with the outside world. Within three to four hours oceans of water came down the Arkansas and Fountain rivers and the wild waters put Pueblo back into the somewhat primitive.

"Saturday morning those above the flood lines found themselves using the fireplace or the back yard to get their breakfasts. Those having coal ranges or oil stoves were in great luck and were envied by their unfortunate neighbors. Water was a deep problem, but Pueblo solved it somehow until the north-side water plant was back in operation. Then the gas company dug out and thousands of families now know the real value of a gas company to a city. The electric lights have been restored and the candle has again gone back to the kitchen to await another call. Every Pueblan now appreciates our public utilities as never before.

"Instead of putting obstacles in the way of progress every city should encourage its public utilities Without them there can be no growing cities. Few know or realize what a queer sensation it is to be absolutely cut off from your luxuries and your necessities and find yourself back in the almost primitive. Ask any Pueblan—he will tell you how it feels."

The Pueblo *Star-Journal*, in an editorial entitled "Pueblo Utilities Win Gratitude of People," said:

"In normal times it is the fashion of many persons to be critical without reason of the services performed by the public utility companies. Most people do not even think for a moment of the wonderful convenience these companies are. Their operation is taken as one of the many incidents of our modern life. It is only when some great emergency arises that the work and worth of the utility concerns are estimated at their real value.

"When the flood descended upon Pueblo and deprived the city of electric light and power, street-car transportation, gas, telephones and water, the people were forcibly reminded of the immense importance these utility concerns are to the life of the community. In an astonishingly rapid time these life-giving arteries of the city were restored in whole or in part, notwithstanding the almost insurmountable obstacles with which those in charge had to contend. The utilities are entitled to the thanks of all residents of Pueblo for the heroic efforts made to restore conditions after the flood."

Shale Oil

(*Continued from page 71.*)

first field plant, we have also maintained a chemical laboratory in which, for more than a year, a chemical engineer and two laboratory chemists have been constantly engaged in chemical research work, the results of which have enabled us to produce, at least in a semi-commercial way, a refined gasoline that in a practical test in an old touring car, with four men as a load, made 34.4 miles per gallon over a rough country road, while the highest test gasoline we could procure made from petroleum, under the same conditions made less than 26 miles per gallon.

Therefore we know now that shale oil can be refined into salable products. Definite public proof of this, of course, can only be made by the continuous and profitable operation of our commercial refinery.

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which we feel sure will be done within the next sixty days. At that time we will also be able to demonstrate conclusively that our refining costs do and will compare very favorably with the cost of refining well petroleum.

Can shale oil and its refined products be marketed profitably now in competition with well petroleum and its refined products?

An oil man from Texas recently said to the writer: "How can you manufacture oil and compete with oil that flows or is simply pumped from the ground?" In reply to my inquiries he stated that he had recently purchased 5,000 bbl. of production at a cost of $1,500 per barrel per day; also he admitted that at the time of making the purchase, he had estimated that it would be necessary to put 60 per cent of his production back into oil leases, drilling, etc., in order to replace the inevitable settling of his production, and thus protect his initial capital investment; also that he had an operating cost of approximately 15 cents per barrel.

At the price of $3.75 then being received by him for his oil, his cost was 15 cents operating cost, plus maintenance cost of 60 per cent, or $2.25, making a total cost of $2.40 as against our actual cost of $1.56 per barrel. This latter figure includes interest, taxes, insurance, depreciation, management, superintendence, and operation. And we have these advantages: Our oil is "made to order" and it is of a superior quality with a consequent greater value, and we can, at will, increase our production to any limit—we have no settling of production. Also we have a limited market at the present time for our crude oil, and especially certain fractions obtained in refining, as "flotation oil" for mineral recovery, at an average price of 30 cents per gallon, or $12.60 per barrel.

Also we can construct our factory at a cost of $750 per barrel per day of production, against his admitted cost of $1,500 per barrel per day.

Therefore, we can compete with well petroleum and its refined products, because our oil costs less and it is a more valuable oil.

Is the manufacturing, refining and sale of shale oil and its products exclusively a "rich man's job," or can this new enterprise be carried on profitably on a small scale?

Not long since a speech on "The Possibilities of Shale" was made by an engineer who had been introduced by the press and otherwise as "a national shale expert." In this speech the statement was made that "$5,000,000 or more was necessary to go into the shale oil business." Later, in conversation with this speaker, I asked him this question: "Suppose you had $5,000,000 and was determined to invest it in the shale oil business, would you invest the entire amount in one huge venture, or would you first construct a small plant, costing, say, $50,000 to $100,000, and after that unit was working satisfactorily add another and then other units until the $5,000,000 had been expended?" On my insisting that he give me a direct answer, he admitted that he "would, of course, adopt the more conservative course." Also he admitted that the shale industry, as all other similar industries have, must be developed along conservative lines in the beginning and gradually grow to its proper proportions.

Having now had the experience of completing one field plant that has been operated successfully, we are prepared to build factories for others at a cost of $750 per barrel per day of production, such factories to have capacities of 100 bbl. per day or more. We know from the operations up to date of our present field plant, with its capacity of 100 bbl. per day, that an oil factory costing from $75,000 to $100,000 or larger can be operated at a profit. This certainly compares very favorably with the cost of oil wells (especially when "dusters" are taken into consideration). And the acquiring and operating of oil wells is not now confined to rich men. Shale oil factories can, without doubt, be constructed and operated profitably on a small scale.

Coke Business Carried Gas Sales

(*Continued from page 74.*)

ness, are not believed to have amassed any large fortunes. A new concern with a larger investment, the most improved equipment and the best organization it could get, might, in time, be able to make reasonable profits on a narrower margin per ton; but it certainly could not hope to do so until it could build up a large volume of business. We express no opinion as to the efficiency of the existing organizations or the reasonableness of the present retailers' margins; but from a general observation of the business we are convinced that a retail coke business established by ourselves would lose money for several years on the same margins.

"Granting that after risking a large investment and running for a few years at a loss, we could finally draw a very large volume of business from our competitors and make a fair return on our investment, what would the "ultimate consumer" profit? The most that he could get would be a small reduction on a ton of coke. He would certainly be disappointed, because he would expect a large reduction in the delivered price of fuel. There could be no reduction in our wholesale prices to our own yards, for we have always kept them as low as possible. The saving in our retail margin could not possibly be great enough to make this fuel seem cheap.

"Taking into account: (a) The initial losses on the new investment, (b) the keen competition of outside coke through all dealers who were not driven out of business by our own competition, (c) the impossibility of ever making our retail margin so narrow as to make a very great regular saving to the consumer, and (d) the general disappointment which would be felt because at best we could never make the retail delivered price of fuel materially cheaper for any considerable length of time than it is under present arrangements—we must admit frankly that the retail fuel business is not a proper side line for a public utility to take up.

"But if we were sure that we could establish a retail business that would greatly increase the local consumption of our coke and give it to the consumer at a much lower price—still we could not do it because we have not the capital and see no prospect of ever getting it. If public-spirited citizens with ample resources care to establish such a business and can give reasonable assurance that they can increase the local consumption of coke at a narrower retailer's margin, there is no doubt they could get our business. The field is an open one. The present retail fuel merchants have no monopoly on it."

The company, in one of its later statements, also takes up a question which has caused some unfavor-

able comment during coal shortages of the war days, etc. It discussed "Why We Do Not Make Wagon-Lot Sales of Coke at Our Plants." A peculiar turn of this statement was found in the following: "We have no intention of encouraging the development of a jitney fuel business in this city." This statement of course, was a back-handed drive at the jitney bus service, which is so rapidly injuring many street railway companies in the country. The gas company, in that statement, said:

"From time to time we are asked why we do not sell wagon-loads of coke at our plants to anybody who wants to call for it. We will endeavor to explain why this seems impracticable to us.

"1. Anybody who visits our plants must be impressed with the fact that most of our coke piles are inaccessible to wagons and trucks because the plants are necessarily laid out with reference to handling coke rapidly in large quantities. This is not an insuperable obstacle to a wagon business, as we could doubtless lay out a wagon yard at each plant. It would mean some waste of valuable space, and such a change would be very difficult to bring about at a time like the present when coke stocks are most unwieldy.

"2. We do not at present have the equipment or the organization to handle such business. In addition to railroad sidings and bins for our wagon yards, we should have to install wagon scales and sales offices and employ clerks to make the sales and supervise the loading and weighing. Such business would have to be on a cash basis and this would involve prompt transfers of money to our city office, as coke sales offices at our plants would not be safe places in which to leave money. We could establish such equipment and organization at each of our plants, but the investment and continuing expense would make it necessary to charge considerably more on wagon-load sales than on carload sales, for the business would be small as compared with the cost.

"3. Assuming that we did not add this expense to our selling price but sold wagon-lots at the same price as carlots, the sales would still be small. Not many consumers would undertake to provide their own teams and to unload the coke and put it into their cellars. If they did not already have transportation facilities and men in their employ to do this, they would find the trouble and annoyance too great for the doubtful economies to be secured.

"Few of the regular coal dealers would send to the plants for coke because transportation to their yards by railroad and from their yards to their customers by wagon would be cheaper than to haul the coke from our plants to their customers. Furthermore, their regular organizations at their yards can handle business better from those places than from our plants. A few dealers whose yards are near our plants might take coke in wagon-lots, but the amount thus taken would be very small.

"The principal class of buyers of wagon-lots of coke would be coal peddlers rather than consumers or regular dealers—persons with little capital and meager equipment who solicit orders and then go after their supplies. If we stood the extra cost of supplying this wagon trade, such men might sell coke within a limited area about each of our plants at less than the prices asked by regular dealers. If we charged them a fair price to cover our extra expense, they could not compete with the regular dealers.

"4. We do not believe we would benefit either the community or ourselves by catering to this class of trade. On the other hand, we are sure we would damage both. Peddlers hauling from our plants could supply only a small proportion of our total population at most. They could not be depended upon except in dull times when they could not get other employment. They would injure the regular dealers who maintain equipment and organizations to serve the community at all times, and without which the community could not be supplied with fuel. They pay no taxes on yards and business stocks and facilities. They could not perceptibly increase the coke consumption of the community, although they might cut into the coke business of the regular retail fuel merchant to a slight extent.

"Whether the sixty-five retail fuel dealers who are handling our coke are pushing it as they should or not, we have no intention of encouraging the development of a jitney fuel business in this city. Such a course would certainly not benefit the community and it would certainly damage our local coke business."

Progress in England in Wood Distillation

(*Continued from page 78*)

wood tar and pyroligneous liquors yielding methyl alcohol or wood spirit, acetone, acetate, etc., the proportionate yield depending largely on the slow or rapid distillation of the wood and the temperatures employed at the various stages of carbonization.

So far as can be ascertained, no attempt appears to have been made in modern days to convert the gas production to any other commercial form, and until quite recently it has been treated as of no value and allowed to escape. Now, however, where oven retorts are in use, means have been taken to fit the retorts with suitable flues for carrying off the non-condensible gases produced in distillation, which are then led back and utilized as fuel beneath the retorts. It is stated that by this means as much as 30 per cent of the fuel used for heating the retorts can be economized.

As has been said, the principal object of the Government in building factories in England for wood distillation on an extensive scale was to obtain an assured supply of acetate of lime, then being called for by the explosives branch on an ever-increasing scale. For ordinary commercial use, however, gray acetate of lime, the particular form in which it has been produced, is not an article of very large consumption in England, and it is probable that the more profitable form in which to market the pyroligneous liquor will be methyl alcohol, acetone and acetic acid.

Owing largely to the growth of the dye industry in England pure methyl alcohol is in greatly increased demand for the manufacture of the various methyl derivatives, such as dimethylaniline, methyl chloride and bromide, etc., used in making aniline dyes. It is also largely used in a cruder form as a denaturant, and for this purpose, having regard to the almost certain increase in the production of power alcohol from various vegetable and other sources, is a commodity for which the demand seems likely greatly to increase. As the raw material for the manufacture of formaldehyde also a rapidly increasing market is developing. Thanks largely to the exigencies of the

situation created in the war, the manufacture in England of this important article seems now to be established on a firm basis, and with the continued increase in the manufacture of innumerable articles for the imitation bone or horn type for domestic use the demand for formaldehyde, and consequently for methyl alcohol for its manufacture, is clearly indicated. In addition to these comparatively new uses for formaldehyde there is, of course, also a well-established market for the commodity as a disinfectant and food preservative, as well as in the photographic industry, in tanning and in the manufacture and application of aniline dyestuffs.

The uses of acetic acid are so numerous and the importation has hitherto been on a scale of such magnitude that the production of this commodity from native raw material would alone justify the establishment of scientific wood distillation on an extensive scale.

In the foregoing remarks consideration of the problem and possibilities of wood distillation in England has been confined to those aspects which particularly concern the treatment of what are known as hardwoods and the existing factories all being situated where waste-wood supplies consist almost entirely of beech, oak and, to a lesser extent, chestnut. Somewhat different consideration arises where the treatment of resinous wood, such as pine and larch, is concerned; but having regard to the reafforestation proposals of the Government, some of which are now being carried into effect on an extensive scale, it may well be that the distillation of other woods will shortly become a practical proposition and the utilization of waste wood for the extraction of spirits of turpentine, rosin, etc., may afford further means of reducing the list of commodities to be obtained from home-grown supplies of raw material but which still continue to be imported.

Muscatine Rate Case Reopened

Muscatine, Iowa.—The famous Muscatine rate case, in which the Muscatine Lighting Company seeks to prevent the enforcement of an ordinance passed by the city council of Muscatine and fixing the rate for gas, is once more in the limelights. The case was started July 29, 1918, and after going through the United States district court here and being taken to the Supreme Court of the United States on an appeal by the light company, it is again where it was nearly three years ago.

Martin J. Wade, judge of the United States district court for the southern district of Iowa, has appointed William G. Raymond as special master in the case, and given him "power to hear and consider oral testimony upon application of either party and to order witnesses before him, and to examine all books and papers and property of the plaintiff, inspect the plant, and do all things which he deems essential to enable him to report upon the following:

"1. Whether the application of the plaintiff is made in good faith, and

"2. The rate, which upon showing of both sides, the plaintiff has good reason to believe it can be established upon final hearing, as being necessary to pay running expenses, and a fair rate of interest upon proper valuation of the property of the plaintiff."

The special master will advise Judge Wade and recommend to him what ought to be done in the matter of permitting an increased rate in the price of gas pending the final hearing. The order continues:

"It is not the intention of the court that there shall be, a full hearing. The appointment of the master is simply to enable the court to determine approximately what ought to be done about permitting an increased rate pending the final hearing."

On July 29, 1918, the Muscatine Light Company filed a bill of complaint, asking the court to prevent the city of Muscatine from enforcing an ordinance passed in which the rate to be charged for gas would be fixed at $1.10 per thousand cubic feet. The company contended that such an ordinance impaired their contract, and under the Constitution could not be enforced.

Sept. 16, 1918, Judge Wade sustained an application by the company for a temporary injunction against the city restraining them from enforcing the ordinance and on Sept. 28, 1918, appointed William G. Raymond as special master. Raymond reported to Judge Wade on October 4, in which he recommended $1.55 per thousand cubic feet as a reasonable charge for gas. The following day Judge Wade issued a temporary injunction.

On Aug. 15, 1919, Judge Wade dismissed the bill of complaints after considerable legal efforts had been made by the city to split the complaint, and the company to have the complaint remain intact. The complaint was finally amended and split and when the court dismissed the bill, the company appealed the case to the Supreme Court of the United States

A mandate was issued by the Supreme Court on April 11, 1921, in which the decree of the lower court was reversed with costs, and remanded to the district court for retrial. The order was made by the late Chief Justice Edward White.

Upon receipt of the mandate the question of reopening the case was again brought up, and the order appointing the special master followed, putting the case in the same position it was when it was started three years ago. Special Master Raymond is expected to file his report with Judge Wade within the next sixty days, at which time it is expected the date for the final hearing will be set.

A Selling Point

In the majority of cases, the thing the public is willing to pay for is not identical with the thing the salesman is trying to sell. Much weight is lost trying to sell a customer a cause where he is willing to buy an effect. The gas or coal man tells how many B.t.u. there are in his particular fuel, rather than the number of loaves of bread that can be baked, or other work accomplished, with each 1,000 cu. ft. or each pound. The garage man says his gasoline has a specific gravity of of 70 deg. Baume, rather than states how far a gallon will carry one.

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	July 21, 1921 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	88	89
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	82½	87
Columbia Gas & Elec. Co.	First 5s	Jan. 1, 1927	82	84
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	96½	97
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	72	74
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	100¾	101½
Consol. Gas Co. of New York	One Year Sec. 8s	Dec. 1, 1921	100⅜	100⅝
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	65	68
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	78	80
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	89	91
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	95	99
Hudson County Gas Co.	First 5s	Nov. 1, 1949	72	74
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1934	75	76½
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	94	96½
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	68	72
Milwaukee Gas Light Co.	First 4s	May 1, 1927	81	83
Pacific Gas & Elec. Co.	Gen. & Ref. 5s	Jan. 1, 1942	77½	78
Pacific Gas & Elec. Co.	Col. Tr. Conv. 7s	May 1, 1925	96	97
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	98	99
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	84	84¾
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	71	72
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	76	79
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	74	77
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	66	68
Southern California Gas Co.	First 6s	Nov. 1, 1950	81	83
United Gas Improvement Co.	Two Year 8s	Feb. 1, 1923	98	98⅛
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	78	80
Washington Gas Light Co.	General 5s	Nov. 1, 1960	77	78
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	74	76

Offer First Mortgage Bonds

The request of the New Bedford Gas & Edison Light Company for bids on $572,000 sixteen-and-a-half-year 6½ per cent first mortgage bonds, legal investment for Massachusetts savings banks, caused a great deal of interest among the leading banking houses of Boston, Mass. The bonds were awarded to White, Weld & Co., who bid 102.65 for the entire amount. The next highest bid was 102.6. White, Weld & Co. will offer these bonds at prices which compare favorably with the high-grade legal railroad bonds. The company has a long and successful record and is now paying $12 a year on its capital stock, which sells at a considerable premium, as bonds of this class, which are legal for savings banks, seldom appear on the market, it is expected that there will be considerable demand from savings banks for the issue.

Contract Expires

Lowell, Mass.—The contract between the city of Lowell and the Lowell Gas Light Company for street lighting has expired, and it is probable that some definite understanding in the matter will be reached at the next meeting of the municipal council. Mayor Thompson called the attention of the aldermen to this fact and advised them to consider the most feasible scheme to adopt. The mayor is inclined to favor a temporary arrangement instead of a long-term contract because of the possible fluctuation in price. Gas costs more now than it did when the expiring contract was made and it is understood that the gas company dropped about $25,000 on the contract by reason of the change in conditions.

Should the city enter into a long-term contract now on the basis of the present gas cost, it might prove a costly mistake because of the possibility of a lower price six months or a year hence. That is why a temporary arrangement seems desirable until market conditions become more stable.

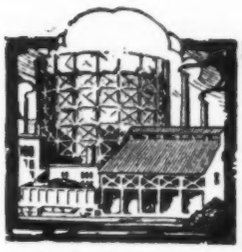
The gas company, it is understood, is agreeable to any arrangement the city may see fit to make, as street illumination represents a very small part of its business.

Gas Company Incorporated

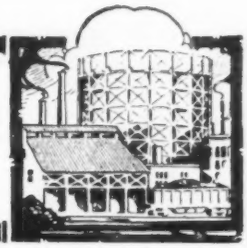
Winter Harbor, Me.—The Winter Harbor Light & Power Company, Winter Harbor, Me., has been incorporated under the laws of the State of Maine, to make and distribute gas and electricity for light, heat, power and other purposes. The company is capitalized at $5,000, with shares of a par value of $100 each. The director and incorporators are: S. P. Wetherill, president; Samuel J. Henderson, treasurer, and George C. Blance, clerk.

Held Gas Company Stock

Josephine B. Rogers, late of Arlington, Mass., was the owner of five shares of stock in the Massachusetts Gas Company, valued at $301.25, according to an inventory of her estate, filed in the Probate Court.



NEWS OF THE GAS INDUSTRY



Probing Gas Rates

Lawrence, Mass.—Mayor White, of Lawrence, Mass., has declared that he will stand out for the very best expert which the city's money can secure for the probe of the rates of the Lawrence Gas Company. The mayor said that a cheap expert will be worse than none at all, and the money expended in the investigation would be wasted. Seeking support of the selectmen of Metheun, Andover and North Andover, the mayor sent the following letter:

"Gentlemen—The city council of Lawrence has petitioned the Massachusetts Public Utilities Commission for an order requiring the Lawrence Gas Company to reduce its rates for gas and electricity.

"As this company supplies the towns contiguous to Lawrence, any reduction there may be will benefit them as well as Lawrence.

"For this reason it seems only just and proper that Lawrence should have their assistance.

"I respectfully request that you take whatever steps are necessary to give Lawrence moral and financial support in this matter; in the same manner that the cities and towns about Boston are supporting Boston in the same kind of a fight.

"Very respectfully,

"WILLIAM P. WHITE, Mayor.

"Copies are sent to Methuen, Andover and North Andover."

Adding Street Lights

Spencer, Mass.—Thirty street lights will be installed to light the South Spencer district at Spencer, Mass., by the Spencer Gas Company, acting on instructions from the Spencer selectmen and the work will start next week. It was voted to install the thirty lights at the annual town meeting in March. The gas company took measurements and found the thirty lights from Dewey street with a light every 300 ft., as the old contract called for, would bring the gas light to the Boston & Albany Railroad bridge and thus a section of the South Spencer district where there are a number of houses, would be without lights. Residents naturally protested to the selectmen and the selectmen and the gas company officials have since been dickering.

The old contract with the gas company has expired and the selectmen held out to spread the lights at a distance of more than 300 ft. apart on the road to South Spencer, where there are no houses. The selectmen carried their point and on this road lights will be further apart.

Held Annual Outing

Haverhill, Mass.—The Haverhill Gas Light Company's employees and families to the number of 200 made a special trip to Hampton Beach, N. H., last week, for the annual outing and field day. The trip to New Hampshire was made in special cars and privately owned automobiles. The feature of the program which marked the third annual consecutive outing, was a special dinner at the Ashworth. During the day, a list of sports was run off, and exhibition of resuscitation of a man overcome by gas fumes given. Bathing, dancing and the enjoyment of the other forms of amusement the beach affords made the event the greatest of its kind ever held by the gas workers.

Will Establish Test Station

Atlanta, Ga.—Following a controversy in the newspapers between President Arkwright, of the Georgia Railway & Power Company and city officials, relative to the quality of gas manufactured by the company, efforts are being made to establish a mutual gas testing station, centrally located, where tests can be taken three times a day in the presence of representatives of the gas company and of the city.

The controversy resulted over a difference in the readings of the calorimeter at the city hall, and the one at the offices of the gas company. According to the city hall calorimeter the gas company during June failed to come up to the average monthly standard of 575 B.t.u. as ordered by the State Railroad Commission. However, according to the calorimeter at the gas company office an average of more than 575 B.t.u. was maintained.

The establishment of a mutual testing station as advocated will serve to remove any further grounds for controversy.

Free Employment Service

The great service of connecting the man who has by years of service and training fitted himself to fill a responsible position, with the right position is being rendered by the Employment Service of the Federated American Engineering Societies, Engineering Societies Building, 29 West Thirty-ninth Street, New York. The service is free to both the employer and the man seeking the position.

The Federated American Engineering societies, having a membership of around 50,000. Anyone, whether a member or not, in need of a position or a man to fill a position, may make use of the service by getting in touch with the above address, and by so doing help the Engineering Societies to render a service to someone.

Making Plant Increases

Atlanta, Ga.—The Georgia Railway & Power Company plans the investment of more than half a million dollars to give Atlanta an increasingly improved gas service, according to a recent announcement made by the company. One of the most important of these improvements includes the installation of a new water gas machine which is now being placed and will be ready to operate August 1. This machine represents an investment of about $60,000 and manufactures 3,000,000 cu. ft. of gas every twenty-four hours. It is the largest type in use anywhere, and the daily capacity of this one machine alone is equal to 50 per cent of last year's maximum daily output of gas in the entire Atlanta district.

Wedding Announcement

Announcement has been made of recent marriage at Danielson, Conn., of Miss Rachel Clarke to Harold L. Shaw of Webster. Mr. Shaw is associated in business with his father, Herbert E. Shaw, general manager of the Webster & Southbridge Gas & Electric Company, with headquarters at Webster, Mass. Mr. and Mrs. Shaw will reside in Webster.

Will Disposes of Gas Co. Shares

The will of Susan (Taber) Thompson, late of New Bedford, Mass., one of the large stockholders in the New Bedford Gas & Electric Company, has been filed at the Registry of Probate in Taunton, Mass. Mrs. Thompson bequeathed her shares in the Gas & Electric Company as follows. Emma T. Bourne, New Bedford, six shares; Elizabeth W. Taber, 44 Morningside Drive, New York, six; Eleanor Taber, same address, three; David Sherman Taber, New York, three; Elizabeth W. Taber, New Bedford, five; Mildred T. Robinson, Lakewood, R. I., five; Annie B. Taber, Brooklyn, five; Harriette T. Richardson, Brooklyn, three; Esther Fox, Brooklyn, three; Elizabeth C. M. Gifford, Cambridge, eight; Margaret Price, New Bedford, three; Helen T. Briggs, Plymouth, three; R. Herschell Taber, Wallingford, Conn., three; Ethel Jarvis, Seattle, Wash., three; Ruth S. Murray, Chappaqua, New York, five.

Chemical Industries to Hold National Exposition

The seventh national exposition of chemical industries is to be held the week of Sept. 12-17 in Eighth Coast Artillery Armory, New York. Over 400 of America's leading manufacturers will meet to consider improved business methods. New equipment for industrial plants to be exhibited.

A great opportunity is offered in every branch of industry to make comparison, secure ideas and valuable information.

Contact Club Meets

The unusually warm weather in Pittsburgh is not preventing the Contact Club members of the Philadelphia Company from continuing their public speaking endeavors. The club now meets in two sections, known as the Tuesday afternoon and the Friday afternoon divisions, for instruction in public speaking by Prof. Sleeth.

Peculiar Explosion a Warning

The world's largest reinforced concrete grain elevator, the $4,000,000 Armour Grain Company elevator at South Chicago, was recently destroyed by an explosion of grain dust, six lives being lost. The cause of the ignition of the dust has not been learned. It is understood that an item of $25,000 for resuming investigation work on dust explosion, appears in the present agricultural appropriation act.

Makes 10-Cent Reduction

A voluntary reduction in the price of gas of 10 cents per thousand cubic feet to $1.70 net, beginning August 1, has been announced by the Pittsfield Gas Company, Pittsfield, Mass., which company stated that "a definite trend toward reduced prices" has begun.

Approves Rate

The Department of Public Utilities at Boston, Mass., on July 8 approved contracts for the sale of gas by the Boston Consolidated Gas Company to three concerns doing business in and around Boston. The first contract is for the sale at a price of 85 cents to the East Boston Gas Company; the second at 85 cents to the Newton & Watertown Gas Light Company; the third at 87½ cents to the Citizens Gas Light Company, of Quincy. Recently the Consolidated Gas Company asked for approval of the foregoing figures. In the case of the East Boston Company the reduction is 10 cents, and in the case of the other companies 5 cents each. Lower operating costs was the reason given by the Consolidated Gas Company for the reduction.

New Gas Holder for Baton Rouge, La.

The Baton Rouge Electric Company is to build a three-lift 300,000 cu. ft. capacity gas holder, the contract for which was just awarded to the Stacey Manufacturing Company, Cincinnati. The holder is a duplicate in dimensions of one the Stacey Manufacturing Company is now building at Rocky Mount, N. C.

Held Stock Valued at $45,625

According to an inventory filed in the Massachusetts Probate Court, Edward J. Mitton, late of Brookline, Mass., was the owner of 500 shares of common stock in the Massachusetts Gas Companies, valued at $45,625. The estate is worth about $3,000,000.

Edward Longstreth Medal of Merit Awarded to W. Barton Eddison

The Franklin Institute of the State of Pennsylvania, acting through its committee on science and the arts, investigating the jet entraining apparatus of the Surface Combustion Company, industrial furnace engineers and manufacturers, 366 Gerard Avenue, New York, have awarded to the inventor, W. Barton Eddison, the Edward Longstreth medal of merit.

All surface combustion installations include a proportioning device which guarantees the delivery of a properly proportioned mixture, the delivery of a homogeneous mixture, and the control of such a mixture located in a single valve.

They ordinarily employ one of two proportioning devices. The low-pressure system which utilizes gas at from two to six inches and air under a pressure varying from one-quarter pound per square inch to approximately one pound per square inch. This system is used mainly on small appliances, the high-pressure system which utilizes gas under pressure, ranging from five pounds per square inch upward. The advantages of this system over the low-pressure system lie mainly in its simplicity. Large quantities of gas can be handled in small pipes. It is also a one-pipe system. Where high-pressure gas is available, direct from the gas mains, this system is economical, as it eliminates all motors, blowers and air piping and cuts down the size of the gas piping to a minimum.

Where high-pressure gas is not available, direct from gas mains, a suitable gas booster may be installed designed to give the necessary maximum capacity at a ten-pound pressure.

Making Plant Additions

The Gas Machinery Company, of Cleveland, Ohio, has been awarded contract by the New Orleans Gas Light Company, of New Orleans, La., for an eleven-foot double superheater, carbureted water gas apparatus.

The New Orleans Gas Light Company has also placed order with the Gas Machinery Company for an eleven-foot water gas generator and equipment for bringing one of their old eleven-foot water gas sets up to date, as the blast and steam areas in modern water gas sets have been greatly increased over what was formerly considered to be good practice.

Will Reduce Rates in Fall

The Worcester Gas Light Company, of Worcester, Mass., cannot make an immediate reduction in the price of gas to consumers in Worcester, but promises a satisfactory reduction early in the fall of the year. This was in substance the statement of C. E. Paige, general manager of the company, and DeWitt Clinton, treasurer, made to Mayor Peter F. Sullivan at the Worcester city hall. The officers of the gas company filed with the mayor a written statement signed by President Louis H. Buckley and General Manager Paige, in which they gave the reasons why the request for a reduction in price of gas asked for by the mayor cannot be granted at the present period. The reasons and the willingness of the officials to promise a reduction in the fall satisfied the mayor, who said "It is gratifying to find that the officials of the gas company are disposed to make a reduction as soon as conditions warrant." The opening paragraph of the gas company statement read: "As we told you at our conference last week, there is no possibility of an immediate reduction in the price of gas." The closing paragraph reads: "We believe that if we can be let alone this summer we can in the early fall make a reduction which will be satisfactory to you and to the citizens of Worcester." The statement says in part: "From 1912 to 1917 the company was compelled to furnish gas to the people of Worcester at a lower rate than any city in New England, with possibly one exception where gas and electricity was combined by a company situated at tidewater.

"The price that prevailed for five years was below the cost of operation plus a reasonable return to the stockholders whose money made it possible to build and equip the plant. If the average price had been charged in Worcester during those years, in our judgment we would not be obliged to charge to-day's price for gas.

"Our works are being operated economically. We believe that in a few months we are going to be in a position to manufacture gas on a lower basis of cost than was possible during the past two years. But remember that while prices on some of our raw materials have declined, yet to-day the freight alone on a ton of coal is more than the entire cost of that ton of coal delivered in our bins four years ago.

"We are just commencing to run into lower costs of production. We assure you, Mr. Mayor, we are doing everything that we know to do to bring about a reduction in the price of gas.

"To reduce the price of gas to-day would mean that we could not earn our fixed charges, that we would have to reduce wages.

"It is not for the best interests of the city of Worcester that either one of these two things occur."

Perfecting Consolidation

A petition has been filed by the Central Maine Power Company, with the Public Utilities Commission of Maine, seeking authority to transfer to the company several subsidiary companies of which the parent company has for a considerable time owned all the stock. The companies named in the petition are: Kennebec Gas & Fuel Company, Knox County Electric Company, Yarmouth Electric Company, Maine Power Corporation, Oxford Electric Company, Winthrop & Wayne Light & Power Company and Readfield Light & Power Company. Since the stock of these companies has been owned by the Central Maine Power Company, the step now contemplated is merely in the nature of a technical perfection of the consolidation that really exists.

Correction

Through a typographical error in our issue of June 4, the capacity of a holder of the Havana Electric Railway, Light & Power Company was described as 33,000 cu. ft. This should have been 330,000 cu. ft. This holder is one of two relief holders and has been out of commission for some years. When rebuilt the total relief capacity of the plant will be 660,000 cu. ft. It is expected that with these two holders, together with two commercial holders, one of 1,520,000 cu. ft. and the other 800,000 cu. ft. capacity, the company will have capacity sufficient for another year at least, although it is said that at that time consideration must be given to building a new holder of over three or five million cubic feet capacity. Few realize the size of the city of Havana, which has a population of approximately 350,000. It is only during the past six or seven years that the people have been using gas for cooking and water heating. In the past two years the daily send-out has increased from 2,000,000 to 3,500,000 cu. ft., which shows that the prospect and opportunity for new business is unlimited.

Practically no gas is used for house lighting, electricity being employed for this purpose. For street lighting the gas department operates and maintains over 5,000 plants, open flame and mantle types.

The construction program of the company includes recently placed orders with the Western Gas Construction Company for one eleven-foot water gas set, coal handling apparatus and blower unit complete with turbine and motor drive, with the Steere Engineering Company for a tower scrubber cooling coil system and a multiple washer; with the American Meter Company for a new Hinman drum in its present fourteen-foot meter, and a new fourteen-foot meter complete, with the Cruse-Kemper Company to rebuild their two-lift relief holders.

Gas Rate Increased

Under the provisions of an order issued by the State Utilities Commission July 12, the Trinidad (Col.) Transmission Railway & Gas Company will make a minimum charge of $2 for 1,000 cu. ft. of gas. This is a 25 per cent increase over the old rate. The company asked for a $2.50 rate, or permission to discontinue its gas service in the event the commission did not grant the increase requested.

The commission denied the company's petition to discontinue service.

Trinidad is the county seat of Las Animas County and is on the main lines of the Santa Fe and Colorado & Southern Railways and is almost sure to grow fast, owing to its ideal location. Even now it has a real metropolitan appearance and must have gas to keep up that clean non-smoky aspect which greets the tourist as he steps off the California limited to get a breath of mountain air.

Withdrawal of Rate Complaint Approved by Commission

Harrisburg, Pa.—The Public Service Commission has approved the withdrawal of the complaint of the City of Pittsburgh, against the Equitable Gas Company, the Peoples Natural Gas Company and the Manufacturers Light & Heat Company, all supplying natural gas in the Pittsburgh district, concerning rates, rules and regulations.

Files Monthly Report

Atlanta, Ga.—The monthly report of the Georgia Railway & Power Company covering the operation of the gas department for the month of May recently was filed with the State Railroad Commission, showing net earnings for the month, after taxes but before depreciation, of $82,968. May earnings were based on the $1.90 rate, which was reduced to $1.65 effective June 1. Had the new $1.65 rate been in effect in May the earnings for that month would have been $50,283.

The Atlanta *Georgian* and *American*, local newspapers that have been fighting the company for several months to bring about a reduction in gas rates, seized upon the company's monthly report of earnings as further evidence in its claims that rates should be reduced. A front page story was published in the *Georgian* immediately following the filing of the report, which occupied four columns of space and was a bitter denunciation of the gas company, the claim being made by the Georgian that the $1.65 rate was unreasonable and unjust. The principle trouble appears to be that the *Georgian* expects the Georgia Railway & Power Company, a privately owned corporation, to operate the gas department of its business with little or no profit.

Gas Light Co. Recovers from War-Time Embarrassment

Bridgeton, N. J.—The stockholders of the Bridgeton Gas Light Company recently held their annual meeting at the offices of the company on Water Street, and of the 1,994 shares of stock 1,585 shares of stock were unanimously cast for directors of the company, the directors being B. H. Minch, Samuel P. Fithian, William C. Mulford, Edward P. Bacon, and Henry A. Jordan.

The directors following their election organized with the selection of these officers who have for years so capably served the corporation:

President, B. H. Minch.

Vice-president, Samuel P. Fithian.

Secretary and auditor, William C. Mulford.

Superintendent and treasurer, Jacob B. Jones.

The outstanding feature of the annual reports which were presented by the directors and the officers were that the company had recovered from the difficulties which had beset the utility during the long continued war period. In common with all utilities the Bridgeton Gas Light Company were handicapped through the war and necessarily were prevented from maintaining a normal progress in the matter of plant improvement and production and distribution efficiency. However, following the war the management has maintained a fixed policy, and the result is that the corporation has now placed itself about in the position it would have been had there not been any interruption with the orderly conduct of the business.

The plant capacity has been increased about 30 per cent, and the entire concern is in excellent physical shape. Production capacity has been increased and the distribution lines have maintained the same. Recently the company has been engaged in doing a vast amount of work to meet the demands of improved streets, and this effort is proceeding without delay and in no way embarrassing the city in its program of street improvement.

H. H. Hankins & Bro. are at present engaged in erecting upon the plant a new coal tipple, and a tar shed has been completed.

The complete reports of the activities of the company met the approbation of the stockholders of the corporation.

Albany Gas Company Reduces the Price

Albany, N. Y.—The price of gas in Albany has been reduced by the Municipal Gas Company, and householders who have been paying $1.50 a thousand feet will after August 20, pay only $1.35 a thousand feet. The company has made this rate for the first 25,000 ft. of gas consumed. For those who use more than 25,000 ft. a month the price will be $1.25 a thousand feet, and all over 50,000 ft. $1.20. The minimum charge is 75 cents per month.

The reason for the reduction is that the price of oil has been materially reduced. The contract price paid during the year which ends August 1 was 11¾ cents. After that date the company will pay 7 cents a gallon for oil. A contract for a year has been made, so that it is likely the reduction, effective August 20, will stand for at least a year.

Recovering from Operation

A. Hurburt, general manager of the gas and oil properties of the Philadelphia Company, Pittsburgh, Pa., underwent an operation July 15 for appendicitis, and is now out of danger.

New Engineering Firm Is Organized

Pittsburgh, Pa.—The firm of See-Seldon & Associates has been formed with offices in the Oliver Building in Pittsburgh. H. W. Seldon was formerly head of the service department for Amsler-Morton Company, and has in the past been connected with the Cambria Steel Company at Johnstown, Pa., doing practical engineering and operating work, and with the Jones & Laughlin Steel Company at Pittsburgh, Pa. The new company is engaged in consulting and operating engineering, offering to all manufacturing plants a production and service efficiency heretofore not available.

Court Decision Has Bearing Upon Commission Rulings

Harrisburg, Pa.—The Superior Court has rendered a decision sustaining the claim of the Duquesne Light Company and the Allegheny County Steam Heating Company, subsidiaries of the Philadelphia Company of Pittsburgh, which reverses the order of the Public Service Commission in reference to rates for service in the Frick Building in Pittsburgh. The decision is important in that it defines the position of the commission in regard to emergency rates filed with it.

P. S. C. Refuses to Order $1 Gas Rate Restored

New ork City.—John J. A. Rogers, counsel for the College Point Taxpayers' Association, recently requested Public Service Commissioner Prendergast to rule that the New York & Queens Gas Company could not charge more than the $1 statutory rate pending a final decision on a new rate by the commission. Mr. Prendergast denied the motion, which was supported by Assistant Corporation Counsel M. M. Fertig for the city.

Rogers charges that the gas company was "playing a trick on the consumers." He argued that the $1 rate was the only rate legally in existence now. He held that the recently adopted and now enforced $1.25 rate was not legal because it had never been settled by a public service commission hearing and that the $1.60 rate asked for had been suspended. The fact that the old $1 rate had been declared confiscatory by the lower courts did not outlaw it, he said, because that decision was being

appealed and had not been passed on by the higher Federal courts.

His motion was denied after several sharp verbal encounters, during which Mr. Prendergast, who presided, found it necessary to invite the counsel to "resume their seats."

Walter R. Addicks, vice-president of the Consolidated Gas Company, of which the New York & Queens is a subsidiary, was cross-examined by Fertig with regard to alleged interlocking directorates between the Consolidated and the Standard Oil Company of New Jersey. Addicks said that practically all of the oil used since 1915 by the two concerns had come from the Standard Oil Company of New Jersey, although prior to that much had come from other companies.

Asks Rate Increase

Buffalo, N. Y.—The People's Gas Company, of West Seneca, has made petition for a 30-cent increase in the price of gas to the villages of Gardenville, Ebenezer and a small portion of South Buffalo. The case was heard recently before Commissioner Pooley. The price now charged for fuel gas is 45 cents per 1,000 cu. ft., with a 50-cent service fee.

Form Employees' Association

Johnstown, N. Y.—To secure better co-operation among the various departments and one another, sixty-five employees of the Fulton County Gas & Electric Company held a rousing and enthusiastic meeting at the office of the company in this city and formed a permanent organization, to be known as the Fulton County Gas & Electric Company Employees' Association. All the various districts over which the company has control were represented at the meeting and these representatives spoke highly in its favor. R. D. Davis was elected president and M. W. Gordon secretary and treasurer of the association.

The organization will hold meetings at regular intervals and from time to time speakers who are qualified to aid in instructing the different departments on their particular line of work, relative to problems involved in public utility business, will be secured and will give talks. This step is to be taken to give the public a more satisfactory service and to promote the welfare of each individual member.

L. C. Smith, manager of the company, and Edward Eamon, chief engineer, gave short addresses and spoke in favor of the organization and promised the support of the company in any of its undertakings. Talks were also given by members from the different towns which are served by the company, and in each case the speaker expressed his enthusiasm for the association and also promised his support.

Among the various activities which the association is to undertake this summer is the organizing of an eight-piece orchestra and the formation of a quartet. Later in the season baseball teams will be organized and games will be played between the various departments.

After the business meeting a jolly good time was had and a feed was served. It was the first get-together of the employees and each one certainly took advantage of the good time.

Table of Gas Rates in Texas

Laredo, Tex.—The school of government of the University of Texas has prepared a statement of rates now being charged for natural gas in nineteen Texas cities, from which it appears the maximum average price charged for household or domestic use is 55 cents per thousand. The report gives this information:

Twelve Texas cities with natural gas service are now enjoying the rate of 50 cents for the first 1,000 cu. ft.; four cities have higher rates, while four have lower rates.

The highest rate charged for natural gas in Texas to domestic consumers is $1.50 per thousand in Paris, which is just twice the rate charged domestic users in Corsicana and 60 cents per thousand higher than the rate charged in Waco. With the exception of Fort Worth, which has a rate of 67½ cents, the other cities of the State with natural gas facilities enjoy a rate of 50 cents per thousand or lower.

Laredo, with a rate to domestic users of 30 cents per thousand, is the lowest in the State, and Texarkana, with a rate of 33 cents per thousand, is the second lowest. The cheapest gas furnished in Texas is that of one natural gas company in Wichita Falls which has a minimum of 6 cents per thousand to large users for industrial purposes. The minimum rate for industrial users in Marshall and Mineral Wells is 10 cents; Cisco has a 12-cent minimum and Gainesville a minimum of 13.25 cents.

National gas rates per thousand for principal cities follow:

	Min.	Max.
Abilene	$0.50	$0.17
Bowie	.50	.21
Cisco	.50	.12
Corsicana	.75	..
Dallas	.50	.21
Denison	.50	.16
Fort Worth	.67½	..
Gainesville	.50	.13¼
Laredo	.30	.15
Marshall	.50	.10
Paris	1.50	..
Texarkana	.33	..
Waco	.90	..
Wichita Falls	.25	.06

Rates for Bridgeport, Denton, McKinney and Sherman are not quoted, since they are on the same scale as those of Bowie. Similar rates are quoted by one company supplying Wichita Falls.

Temporary Increase Granted

Amityville, N. Y.—The public service commission has announced that it has granted a temporary increase in the gas rate to the Long Island Lighting Company pending the final determination of the case which has been before the commission since early in May. The commission allowed an increase of 25 cents per 1,000 cu. ft., making the new rate $2. The company had made a plea for a rate of $2.25.

Lawrence S. Coit, who is leading the fight for the towns of Babylon, Huntington and Islip, when informed of the tentative raise said:

"In view of the contracts for gas, oil and coal by which the company is at present bound it is only reasonable that a tentative raise should be given them and we did not seriously oppose a slight raise pending the final settlement of the contest."

How much the rate will be when the case is settled it is impossible to predict. It is felt that a victory has been achieved by the fact that the tentative increase has been kept down to $2 as against the rate of $2.25 for which the lighting company made an urgent request to the public service commission.

To Collect 50-Cent Gas Charge

Lawrence, Kan.—The Citizens' Light, Heat & Power Company, of Lawrence, may continue to collect a 50-cent gas service charge under a decision handed down by the State Supreme Court denying a writ of mandamus to the public utility commission. The court held that the Lawrence company was a party to the decree handed by Judge Wilbur F. Booth of the Federal court at Minneapolis last December enjoining enforcement of the 80-cent rate established by the utility commission. Although the Lawrence company entered no formal appearance at the supplementary proceedings before Judge Booth, it was specifically named in the decree. The proceedings were instigated by the gas distributing companies at Kansas City, Kan., Atchison, Leavenworth and Topeka, which have also put service charges into effect.

Gas Company Shows Growth of City

Modesto, Cal.—That Modesto is fast becoming one of the major towns of the San Joaquin Valley is shown in an application filed with the State Railroad Commission at San Francisco.

At the last public meeting of the commission, held at San Francisco July 1, Frank Cressey of the Modesto Gas Company in applying for authority to issue bonds, stated that the city was growing so fast that it has been constantly necessary to expend earnings for its capital purposes and the company desired permission to issue bonds in the sum of $20,000 of an authorized issue of $200,000 to reimburse its treasury.

Increased Rates Allowed

Syracuse, N. Y.—An order approving the new rates for gas and electricity, upon which the Syracuse Lighting Company and municipal administration have agreed, has been signed by the public service commission, according to announcement at the offices of the commission in Albany.

Beginning July 12 the lighting company sent out its entire force of meter readers, aided by extras from its office staff, to read every gas and electric meter within the city limits. A bill will be sent every consumer, based on the old rates and covering all gas and electricity used prior to the final reading.

The bill covering the rest of July will be based on the new rates, which involve an increase of 23 cents per 1,000 cu. ft. for gas and a decrease of ½ cent per kilowatt-hour for electricity.

The plan for reading all meters and presenting a final bill at the old rates was adopted by the company to eliminate a vast amount of bookkeeping and confusion which would follow an effort to prorate the July bills. Under the plan to be followed, every customer will "start clean" on the new rate basis and will have a chance to check up bills intelligently.

Edmund H. Lewis, corporation counsel, who arranged the compromise with the lighting company, said that the public does not appear to understand that the new rates are fixed for a period of only six months.

"Consumers will pay $1.18 per 1,000 cu. ft. for gas and 7½ cents per kilowatt-hour for electricity only during the six months following the signing of an order by the commission," he said. "At the end of that time, which will be in January, the city or the company will be free to petition for an increase or reduction in either rate."

With the compromise rates scheduled effective, Mr. Lewis was informed that customers of the lighting company want some action on a new ground for complaint.

Up to the last few weeks the company has installed gas "services" in new dwellings without charge. It is now making a charge for laying connections between the property line and the house line. In some cases it amounts to $40 or $50, and in other cases to twice that amount.

According to Mr. Lewis, the charge is in contradiction to an agreement between the administration and the company whereby the company promised to eliminate such a charge. Company officials say, however, that they made no such agreement. The difference of opinion will be taken up at conferences to be held next week.

Seeks Rate Increase

Enid, Okla.—Copies of the petition filed before the corporation commission by the Oklahoma Gas & Electric Company for an increase of their gas rate from 40 to 65 cents a thousand cubic feet were received here by Lincoln Beerbower, manager of the Enid division.

"That the gate rate established by the Corporation Commission is in our opinion unjustifiable in the facts before the commission and particularly unjustifiable in taking into consideration the past history of the relative positions of both companies and that our position is one of unalterable opposition to the gate rate principle, and to the abrogation of the contract with the Oklahoma Natural Gas Company," was the official statement given out by Beerbower. He did not comment further.

It is believed here that this action of the company was taken as a matter of protection because of the gate rate recently allowed. They are asking for the increase with a view to bringing their rate to where they will be able to make the same percentage of profit as at the present time.

Branding the requested rate raise of the Oklahoma Gas & Electric Company as unwarranted and without reason, the board of directors of the chamber of commerce instructed their secretary, Roy L. Emry, to assist the city commissioners and the city attorney in fighting it when it comes before the corporation commission.

"Thre is nothing we can do until the matter comes up," Emry declared. He also said he believed the Oklahoma Gas & Electric Company was attempting to protect itself from the recent gate rate ruling of the Corporation Commission.

Fire in Gas Plant

Bristol, Tenn.-Va.—Fire which broke out at the plant of the Bristol Gas & Electric Company threatened to destroy the city's source of gas and electric power and threw the city into total darkness. Strenuous efforts were made to keep the fire from reaching the large gas tank located at the plant.

Offer 7 per cent Bonds

J. P. Morgan & Co. announces an offering of $7,000,000 Rochester Gas & Electric Corporation general mortgage twenty-five-year 7 per cent gold bonds, series "B." Subscription books remain open indefinitely. Associated with the Morgan Company in the offering is the First National Bank, National City Bank, Harris Forbes, Guaranty Company and the Bankers Trust Company.

Says Gas Lamps May Go

Glassboro, N. J. — Removal of every street gas lamp in the town will be ordered by council before it will pay a $12 increase a year under a new rate announced by the New Jersey Gas Company. A bill for the lamps at the increased rate was received by council. The bill was tabled and the borough clerk was instructed to write the company that council would keep the lamps at the old rate, but if the new rate was charged the company could take its lamps off the streets. The town now has forty-one such lamps, for which it pays an annual rental of $30 each. The new annual rate, approved by the public utility commission in a recent ruling, is $42 a lamp. Mayor Duffield and council have figured that they can effect a saving by changing to electricity at a rate of $25 a year for each street lamp.

To Consider Gas Rate Agreement

Hamilton, Canada. — The draft by-law and agreement submitted for the United Gas & Fuel Company is now printed, and a meeting of the gas committee is being arranged. Owing to the absence of the chairman, Mr. Treleaven, who is in Toronto, the committee was not called together, but little further trouble is anticipated.

Members of the gas committee are not inclined to regard the fixing of the natural gas rate in western Ontario by Referee Henderson as likely to have any direct affect here. In Chatham the rate for natural gas is fixed at 45 cents per 1,000 cu. ft., and for Windsor, Walkerville and other towns it is to be 50 cents. The companies had asked for a rate of 70 cents.

There is a belief, though, that ultimately the gas referee will set a rate for this district. One of those subscribing to this opinion is Controller Davis, who expressed himself as inclined to believe that the referee would not set a much lower rate than 75 cents here.

Adds Million to Capital Stock

Buffalo, N. Y. — The Iroquois Natural Gas Company will increase its capital stock from $10,000,000 to $11,000,000, according to papers filed in the county clerk's office.

According to Bert C. Oliphant, president, the million-dollar increase will take care of additions to the company's property.

Accumulated additions to the property held by the company made the increase desirable that the capital may conform with the valuation of the property.

The papers were filed by the Natural Gas Fuel Company, owner of the capital stock of the Iroquois company, and signed by W. J. Judge, president.

Will Reduce Rate

Poughkeepsie, N. Y.—The drop in the price of gas in Poughkeepsie, promised by the Central Hudson Gas & Electric Company, is soon to come, it was announced by Leon H. Scherck, for the company. The reduction will come before the end of the month, he added.

In making this reduction the comcustomers the benefit of the reducepany is simply passing along to its customers the benefit of the reduction of the cost of coal oil, which enters largely into the manufacture of illuminating gas.

Whether the gas is used for fuel or for illuminating purposes, it makes no difference. The reduction will be on both, Mr. Scherck says.

It was in the middle of May that the company first announced that the reduction in cost of gas might be expected. The company at that time was arranging for the construction of tanks that would enable it to purchase a year's supply of coal oil at a reduced figure. Plans have progressed to such an extent that the company is now ready to state definitely that the drop in cost will come before the end of July. These tanks will have a capacity of three-quarters of a million gallons.

"These tanks have been ordered and we expect that they will be erected within the next thirty days," said Mr. Scherck. "We have had under negotiation the purchase of both coal and oil and have been unable to make any announcement as to the reduction in gas rate until the year's supply of oil could be purchased, which in turn necessitates the completion of the tanks at an early date.

"We are now expecting to be in a position to make further definite announcement during this month."

Capital Increase

Iroquois, Buffalo Natuarl Gas Company, Buffalo, $10,000,000 to $11,000,000.

Gas Consumption Takes Drop

Washington, D. C —Consumption of gas is falling off this year, as compared with last year. Howard S. Reeside, president of the Washington Gas Light Company, stated recently, discussing the forthcoming investigation of the Utilities Commission into rates.

To date this year the company has sold 144,000,000 cu. ft. less than for the same period of 1920, the president said. This drop is believed to have resulted partly from a reduction in population.

While prices of oil and other products entering into the manufacture of gas have gone down this year, this falling off in the use of gas has to a certain degree offset the decline in expenses in figuring on rates, Mr. Reeside pointed out.

The president of the company, however, indicated his willingness to inform the commission at the forthcoming hearing of the lowest rate on which the company feels it could operate and earn a reasonable return on its valuation.

Robert Luther, accountant for the company, is now engaged in going over the books to determine at what rate the company could live on after September. As announced in the *Star* a few days ago, Mr. Reeside hopes to be able to tell the commission the company can stand a reduction in the rate of $1.25 per thousand cubic feet to householders.

Just how much this reduction will be he cannot state until Mr. Luqueer has completed his investigation.

Mr. Reeside does not expect to file a petition with the commission prior to the date of the public hearing, which has been set for 10.30 on July 22.

Fitchburg Gas Company

The Boston Department of Public Utilities yesterday approved the issue by Fitchburg Gas & Electric Company of 12,343 additional shares of stock at $55 a share. The proceeds of 3,272 shares are to be applied to the payment and cancellation of an equal amount of the company's obligations represented by its promissory notes outstanding Dec. 31, 1920, and the proceeds of the sale of 9,071 shares are to pay for the cost of additions to plant made subsequent to December 31.

Tells Why Rates Are Not Dropping

Milwaukee, Wis.—"The public utilities are the only business I know whose operating sheets did not record payment of excess profits taxes during the war," said J. P. Pulliam, president of the Wisconsin Electrical and Wisconsin Gas Associations, in issuing a statement in reply to questions from different sections of Wisconsin asking why prices of public utility services are not dropping with other commodities.

"One reason that many people seem to forget is that utility rates did not advance comparably to commodity prices during the period when farmers, laborers, retailers, manufacturers and property owners' profits soared sky high," said Mr. Pulliam. "Utilities earnings were anchored to earth by regulation. They were not permitted to earn profits of 100 per cent and over all those years like other business was. Utilities were only granted increases within the last year or so and those increases limited to 6 and 8 per cent returns. If utility rates did not double, treble or quadruple, naturally it is impossible to contract them like other commodities. Utilities were and still are the cheapest commodities necessary to life on the market to-day.

"Another reason is that during this period when utility earnings were not permitted to soar, their operating costs steadily increased. Drops in prices of commodities used by utilities have been more apparent than real. To get back to pre-war levels would mean that commodities used by utilities would also have to be based on pre-war prices. That would mean that coal screenings which now cannot be contracted for at less than $2.50 a ton at the mines would again have to go down to 80 cents a ton where it was four years ago. Pre-war rates would also mean basic freight rates 60 per cent lower than they are to-day and labor on a pre-war basis.

"A further reason is that utilities are being bowed under a constantly accumulating tax load. In Wisconsin taxes on utilities have increased in the past ten years 238 per cent, and I am just informed that the tax commission has announced another increase of 11 per cent or more for 1921. In many instances increase in taxes alone are such as to offset all reductions in cost of coal, materials, supplies and operation. In some instances taxation is forcing rates higher.

"Another reason is that utilities paid—and still are paying—from 8 to 12 per cent for the money they borrowed to extend their plants to take care of the volume of new war business. Now that business is temporarily less active, power, light and heat is not being consumed as formerly. Revenues of the utilities, naturally, have shrunk, but there has been no shrinkage in interest charges or other fixed obligations, overhead costs or operating expense.

"People did not show a great concern on such small items as utility rates when they were being kept down while all other prices went up, but now when they are being raised 2 and 3 cents for street-car rides and a small increase per month for gas and telephone services, to meet higher operating costs, people who generally will be reasonable when they stop to reason are persistently refusing to reason.

"The utilities seek the co-operation of the public with the strong desire to give the people the best service possible if for no other reason than a selfish one, for the more and better we please the public the more of our service the public will use. The interest of the public and the utilities, therefore, are in accord, not in conflict."

Claims Against Texas Gas & Fuel Company Approved

Houston, Tex.—Judgments aggregating $700,000 were granted against the Texas Gas & Fuel Company in Federal court by Judge J. C. Hutcheson. The sale at public auction of its electric plants and ice plants in eight cities in West Texas has been ordered.

This decree is the result of the claims against the company brought by the National Shawmut Bank of Boston, jointly National Shawmut Bank and the American Trust Company and the Guardian Trust Company of Houston. R. U. Culberson, special master commissioner, was ordered to sell the company's plants at Kingsville, Bishop, Center, Del Rio, Cuero and Victor, and the electrical transmission line between Victoria and Cuero.

To the National Shawmut Bank of Boston Judge Hutcheson allowed a judgment of $75,748.47 against the transmission line; National Shawmut Bank on vendor's lien notes $150,000. A joint judgment for the National Shawmut Bank and the American Trust Company for $30,118.75 on vendor's lien notes and $10,000 additional attorney's fees was granted. The Guardian Trust Company was awarded judgments for $24,700, $74,963.31 and $57,572.94.

The sale to be conducted by Culberson will be held at Victoria on the first Tuesday in September. This sale will include the plants at Kingsville, Bishop, Center, Del Rio, Cuero and Victoria. The plants at Clarendon and Childress are also to be sold at some future date.

E. C. Weston Heads Gas Co. in Georgia

Middletown, Conn.—Edgar C. Weston, of Crescent Street, left July 9 for Athens, Ga., where he will take the position of manager and treasurer of the Athens Gas Company.

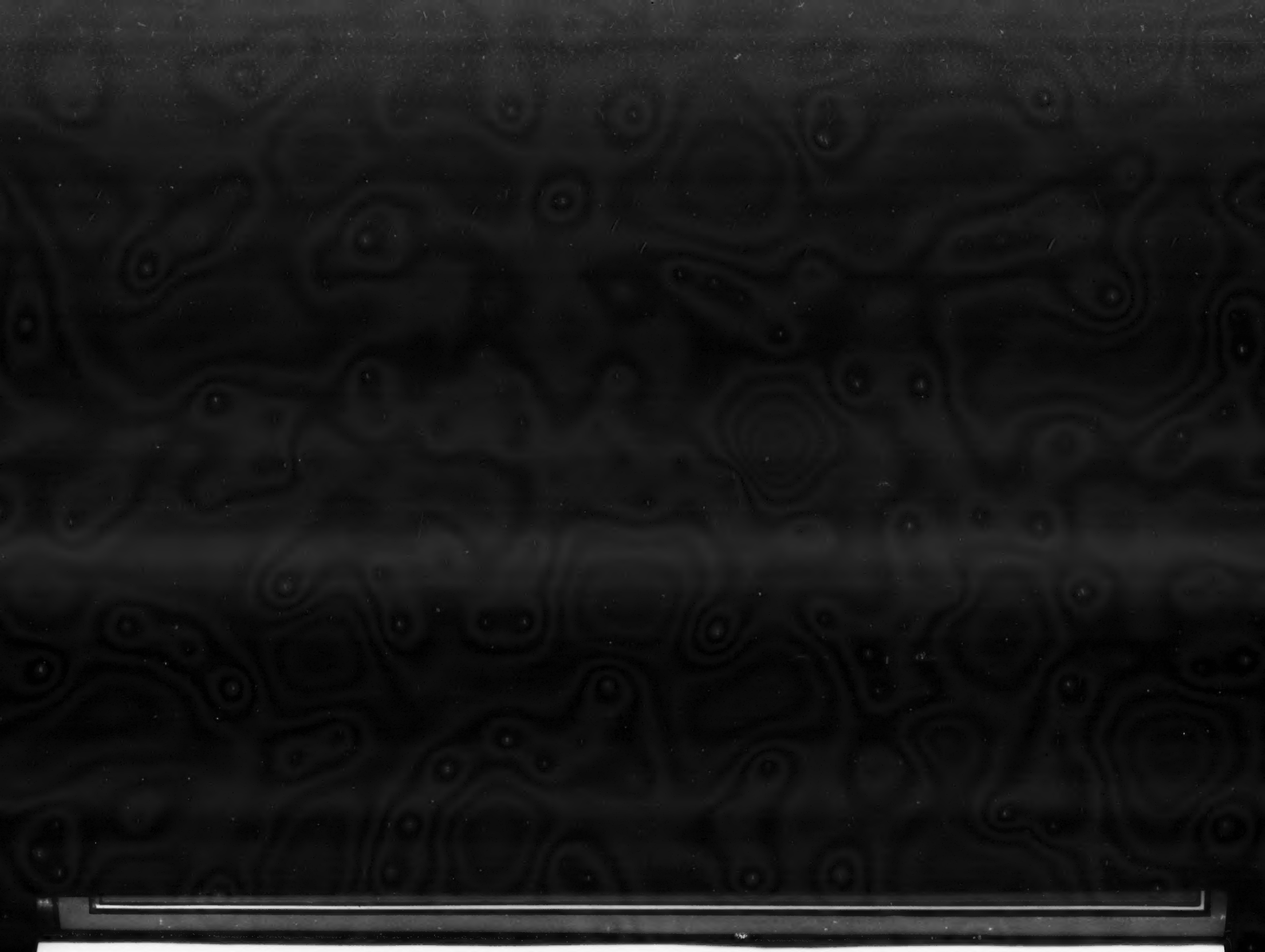
Mr. Weston, who has been a resident of Middletown for the last ten years, was with the local Gas Light company as secretary and treasurer for a period of nine and one-half years.

On the 1st of June he went to Athens as consulting engineer for the company. Later the offer of a position at Athens came and he decided to accept.

Mrs. Weston and the children will continue to reside in this city until the fall, when they will remove to Athens to join Mr. Weston.

Gas Company Manager and Miss Kenner Wed

Waxachie, Tex.—Miss Jennie Kenner, daughter of Mr. and Mrs. F. B. Kenner, and Ozro Cheatham, local manager for the North Texas Gas Company and son of Alderman and Mrs. T. O. Cheatham, were married at a beautiful lawn wedding at the home of the bride's parents, the Rev. Eugene W. Potter, pastor of the First Methodist Church, officiating. Mr. and Mrs. Cheatham departed for Galveston on their wedding trip.

Gas Company to Revise Rate

Oklahoma City, Okla.—Application has been made to the State corporation commission by the Guthrie Gas, Light, Fuel & Improvement Company for an increase in gas rates from 40 cents to 48 cents.